

SEQUENCE LISTING

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Treacy, Maurice
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<120> SECRETED PROTEINS AND POLYNUCLEOTIDES ENCODING THEM

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<150> 09/746,783

<151> 2000-12-21

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<170> PatentIn version 3.2

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | |
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| Pro | Asp | Gly | Val | Arg | Pro | Gln | Pro | Ser | Ser | Ser | Pro | Ser | Gly | Ala | Val |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |
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Val Asp Leu Phe Pro Val Leu Pro Ile Cys Val Cys Asp Leu Thr Pro
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Gly Ala Cys Asp Ile Asn Cys Cys Cys Asp Arg Asp Cys Tyr Leu Leu
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His Pro Arg Thr Val Phe Ser Phe Cys Leu Pro Gly Ser Val Arg Ser
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Ser Ser Trp Val Cys Val Asp Asn Ser Val Ile Phe Arg Ser Asn Ser
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Lys Val Asn Ala Thr Asn Phe Gln Ala Leu Val Ala Glu Phe Gly Gly
180 185 190

Glu Ser Phe Thr Ser Thr Phe Gln Thr Gln Ser Pro Pro Ser Phe Tyr
195 200 205

Arg Ala Gly Asp Pro Ile Leu Thr Tyr Phe Pro Lys Trp Ser Val Ile
210 215 220

Ser Leu Leu Arg Gln Pro Ala Gly Val Gly Ala Gly Gly Leu Cys Ala
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Arg Phe Phe Gln Glu Pro Gly
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          20          25          30

```

```

Ala Ser Phe Met Gly Ser Thr Phe Asn Ile Ser Leu Asn Lys Glu Glu
          35          40          45

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Met Glu Phe Gln Pro Asn Gln Glu Asp Glu Glu Asp Ala His Ala Gly
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 Ile Ile Gly Arg Phe Leu Gly Leu Gln Ser His Asp His His Pro Pro
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 Arg Ala Asn Ser Arg Thr Lys Leu Leu Trp Pro Lys Arg Glu Ser Leu
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 Leu His Glu Gly Leu Pro Lys Asn His Lys Ala Ala Lys Gln Asn Val
 100 105 110
 Arg Gly Gln Glu Asp Asn Lys Ala Trp Lys Leu Lys Ala Val Asp Ala
 115 120 125
 Phe Lys Ser Ala Pro Leu Tyr Gln Arg Pro Gly Tyr Tyr Ser Ala Pro
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 Gln Thr Pro Leu Ser Pro Thr Pro Met Phe Phe Pro Leu Glu Pro Ser
 145 150 155 160
 Ala Pro Ser Lys Leu His Ser Val Thr Gly Ile Asp Thr Lys Asp Lys
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 Ser Leu Lys Thr Val Ser Ser Gly Ala Lys Lys Ser Phe Glu Leu Leu
 180 185 190
 Ser Glu Ser Asp Gly Ala Leu Met Glu His Pro Glu Val Ser Gln Val
 195 200 205
 Arg Arg Lys Thr Val Glu Phe Asn Leu Thr Asp Met Pro Glu Ile Pro
 210 215 220
 Glu Asn His Leu Lys Glu Pro Leu Glu Gln Ser Pro Thr Asn Ile His
 225 230 235 240
 Thr Thr Leu Lys Asp His Met Asp Pro Tyr Trp Ala Leu Glu Asn Arg
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 Asp Glu Ala His Ser
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Leu Met Arg Leu Arg Lys Gln Leu Phe Leu Arg Ser Ala Leu Cys Asn
          20          25          30
```

```
His Arg Ser Arg Glu Leu Tyr Gly Ser Gly Arg Gly Gly Ala Leu Thr
          35          40          45
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```
His Val Val Phe Val Asn Gly Gly Cys His Leu Phe Ile Asp Ala Gly
          50          55          60
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```
Thr Arg Val His Leu Leu Asp Ala Lys Gly Leu Ser Phe Thr Gln Asn
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Val Phe Ile Cys Ile Cys Tyr Cys Leu Gln Tyr Ile
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Phe Ile Leu Phe Tyr Phe Met Phe Phe Gly Thr Glu Ser Ser Leu Leu
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Val Leu Ser Ser Asn Val Pro Leu Leu Ala Leu Glu Phe Leu Glu Ile
35 40 45

Ala Gln Ala Lys Glu Lys Ala Phe Leu Pro Met Val Ser His Thr Phe
50 55 60

His Met Arg Thr Glu Glu Ser Asp Ala Ser Gln Glu Gly Asp Asp Leu
65 70 75 80

Pro Lys Ser Ser Ala Asn Thr Ser His Pro Lys Gln Asp Asp Ser Pro
85 90 95

Lys Ser Ser Glu Glu Thr Ile Gln Pro Lys Glu Gly Asp Ile Pro Lys
100 105 110

Ala Pro Glu Glu Thr Ile Gln Ser Lys Lys Glu Asp Leu Pro Lys Ser
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Ser Glu Lys Ala Ile Gln Pro Lys Glu Ser Asn Ile
130 135 140

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aaaaaaaaaa aaaaaa 75

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Gln Gln Trp Met Gln Ser Phe Gln His Gln Gln Asp Pro Ser Gln Ile
 20 25 30

Asp Trp Ala Ala Leu Ala Gln Ala Trp Ile Ala Gln Arg Glu Ala Ser
 35 40 45

Gly Gln Gln Ser Met Val Glu Gln Pro Pro Gly Met Met Pro Asn Gly
 50 55 60

Gln Asp Met Ser Thr Met Glu Ser Gly Pro Asn Asn His Gly Asn Phe
 65 70 75 80

Gln Gly Asp Ser Asn Phe Asn Arg Met Trp Gln Pro Glu Trp Gly Met
 85 90 95

His Gln Gln Pro Pro His Pro Pro Pro Asp Gln Pro Trp Met Pro Pro
 100 105 110

Thr Pro Gly Pro Met Asp Ile Val Pro Pro Ser Glu Asp Ser Asn Ser
 115 120 125

Gln Asp Ser Gly Glu Phe Ala Pro Asp Asn Arg His Ile Phe Asn Gln
 130 135 140

Asn Asn His Asn Phe Gly Gly Pro Pro Asp Asn Phe Ala Val Gly Pro
 145 150 155 160

Val Asn Gln Phe Asp Tyr Gln Asp Leu Gln Asp Leu Gln His Leu Pro
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Arg Ile Glu Glu Lys Gly His His His Ser Gly Ile Val Ser Val His
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Leu Leu His Phe Leu
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Met Gln His Gln Asn Gln Ser Leu Ser Met Leu Asp Glu Ile Leu Glu
20          25          30

```

```

Asp Val Arg Lys Ala Ala Asp Arg Leu Glu Glu Glu Ile Glu Glu His
35          40          45

```

```

Ala Phe Asp Asp Asn Lys Ser Val Lys Gly Val Asn Phe Glu Ala Val
50          55          60

```

```

Leu Arg Val Glu Glu Glu Glu Ala Asn Ser Lys Gln Asn Ile Thr Lys
65          70          75          80

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Arg Glu Val Glu Asp Asp Leu Gly Leu Ser Met Leu Ile Asp Ser Gln
 85 90 95

Asn Asn Gln Tyr Ile Leu Thr Lys Pro Arg Asp Ser Thr Ile Pro Arg
 100 105 110

Ala Asp His His Phe Ile Lys Asp Ile Val Thr Ile Gly Met Leu Ser
 115 120 125

Leu Pro Cys Gly Trp Leu Cys Thr Ala Ile Gly Leu Pro Thr Met Phe
 130 135 140

Gly Tyr Ile Ile Cys Gly Val Leu Leu Gly Pro Ser Gly Leu Asn Ser
 145 150 155 160

Ile Lys Ser Ile Val Gln Val Glu Thr Leu Gly Glu Phe Gly Val Phe
 165 170 175

Phe Thr Leu Phe Leu Val Gly Leu Glu Phe Ser Pro Glu Lys Leu Arg
 180 185 190

Lys Val Trp Lys Ile Ser Leu Gln Gly Pro Cys Tyr Met Thr Leu Leu
 195 200 205

Met Ile Ala Phe Gly Leu Leu Trp Gly His Leu Leu Arg Ile Lys Pro
 210 215 220

Thr Gln Ser Val Phe Ile Ser Thr Cys Leu Ser Leu Ser Ser Thr Pro
 225 230 235 240

Leu Val Ser Arg Phe Leu Met Gly Ser Ala Arg Gly Asp Lys Glu Gly
 245 250 255

Asp Ile Asp Tyr Ser Thr Val Leu Leu Gly Met Leu Val Thr Gln Asp
 260 265 270

Val Gln Leu Gly Leu Phe Met Ala Val Met Pro Thr Leu Ile Gln Ala
 275 280 285

Gly Ala Ser Ala Ser Ser Ile Val Val Glu Val Leu Arg Ile Leu
 290 295 300

Val Leu Ile Gly Gln Ile Leu Phe Ser Leu Ala Ala Val Phe Leu Leu
 305 310 315 320

Cys Leu Val Ile Lys Lys Tyr Leu Ile Gly Pro Tyr Tyr Arg Lys Leu
 325 330 335

His Met Glu Ser Lys Gly Asn Lys Glu Ile Leu Ile Leu Gly Ile Ser
 340 345 350

Ala Phe Ile Phe Leu Met Leu Thr Val Thr Glu Leu Leu Asp Val Ser
 355 360 365

Met Glu Leu Gly Cys Phe Leu Ala Gly Ala Leu Val Ser Ser Gln Gly
 370 375 380

Pro Val Val Thr Glu Glu Ile Ala Thr Ser Ile Glu Pro Ile Arg Asp
 385 390 395 400

Phe Leu Ala Ile Val Phe Phe Ala Ser Ile Gly Leu His Val Phe Pro
 405 410 415

Thr Phe Val Ala Tyr Glu Leu Thr Val Leu Val Phe Leu Thr Leu Ser
 420 425 430

Val Val Val Met Lys Phe Leu Leu Ala Ala Leu Val Leu Ser Leu Ile
 435 440 445

Leu Pro Arg Ser Ser Gln Tyr Ile Lys Trp Ile Val Ser Ala Gly Leu
 450 455 460

Ala Gln Val Ser Glu Phe Ser Phe Val Leu Gly Ser Arg Ala Arg Arg
 465 470 475 480

Ala Gly Val Ile Ser Arg Glu Val Tyr Leu Leu Ile Leu Ser Val Thr
 485 490 495

Thr Leu Ser Leu Leu Leu Ala Pro Val Leu Trp Arg Ala Ala Ile Thr
 500 505 510

Arg Cys Val Pro Arg Pro Glu Arg Arg Ser Ser Leu
 515 520

<210> 14
 <211> 324
 <212> DNA
 <213> Homo sapiens

<400> 14
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atgcggcggc ctttgccgcc tcgccccga ccctctgcc tgttctccat gttgcatttc 120
tcgtcagttt ctcgggagggt gtagctgccg ctgccaccag agccggcggg gcatcgcgct 180
gctcattcat ccggccgcac tttcttttcc gtttccaccc atcccttccc atttccttct 240
ccctttcccc gccagcttcg catccatctc cccacccccg taacccttcc tgcctccatc 300
caccgggggt attgccgcaa aaga 324

<210> 15
<211> 550
<212> DNA
<213> Homo sapiens

<400> 15
gctgaacatt tcagaaatac agaagttgaa gcagcagctt atgcaggtag agcgggaaaa 60
ggccattctt ttggccaacc tacaggagtc acagacacag ctggaacaca ccaagggggc 120
actgacggag cagcatgagc ggggtgcaccg gctcacagag cacgtcaatg ccatgagggg 180
cctgcaaagc agcaaggagc tcaaggctga gctggacggg gagaagggcc gggactcagg 240
ggaggaggcc catgactatg aggtggacat caatggttta gagatccttg aatgcaaata 300
caggggtggca gtaactgagg tgattgatct gaaagctgaa attaaggcct taaaggagaa 360
atataataaa tctgtagaaa actacactga tgagaaggcc aagtatgaga gtaaaatcca 420
gatgtatgat gagcagggtga caagccttga gaagaccacc aaggagagtg gtgagaagat 480
ggcccacatg gagaaggagt tgcaaaagat gaccagcata gccaacgaaa atcacagtac 540
ccttaatac 550

<210> 16
<211> 170
<212> PRT
<213> Homo sapiens

<400> 16

Met Gln Val Glu Arg Glu Lys Ala Ile Leu Leu Ala Asn Leu Gln Glu
1 5 10 15

Ser Gln Thr Gln Leu Glu His Thr Lys Gly Ala Leu Thr Glu Gln His
20 25 30

Glu Arg Val His Arg Leu Thr Glu His Val Asn Ala Met Arg Gly Leu
35 40 45

Gln Ser Ser Lys Glu Leu Lys Ala Glu Leu Asp Gly Glu Lys Gly Arg
50 55 60

Asp Ser Gly Glu Glu Ala His Asp Tyr Glu Val Asp Ile Asn Gly Leu
65 70 75 80

Glu Ile Leu Glu Cys Lys Tyr Arg Val Ala Val Thr Glu Val Ile Asp
85 90 95

Leu Lys Ala Glu Ile Lys Ala Leu Lys Glu Lys Tyr Asn Lys Ser Val
100 105 110

Glu Asn Tyr Thr Asp Glu Lys Ala Lys Tyr Glu Ser Lys Ile Gln Met
115 120 125

Tyr Asp Glu Gln Val Thr Ser Leu Glu Lys Thr Thr Lys Glu Ser Gly
130 135 140

Glu Lys Met Ala His Met Glu Lys Glu Leu Gln Lys Met Thr Ser Ile
145 150 155 160

Ala Asn Glu Asn His Ser Thr Leu Asn Thr
165 170

<210> 17
<211> 505
<212> DNA
<213> Homo sapiens

<400> 17
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tccaccagca aaaagagatt gtcagcagcc tgtgcttccg taccgccaca gtgttcacaa 120
ctagccggga ggcaagactg cccaactgtc agtcctgaca cagctctccc tgaggagcag 180
ccacattcca gtcgccagt gccccctctc cactgtctct ccaagcctcc tcacccttag 240
tcttcatctc ctgtggacaa acatctgggg tggaagtttt gtagccacac acaggatact 300
gcccagatc cagcgggtgt tttcttctcg gttgttagat gtacaattgg attaattgcc 360
atcgtttttg aagacgagag aaagttgaga agaacacgaa gcacagaccc tgatgtgata 420
aaacattttg tggtttctct gagtcacaga taaacttctg ccatcaaag gctacagttc 480
atttaaattt aaaaaaaaaa aaaaa 505

<210> 18
<211> 481
<212> DNA
<213> Homo sapiens

<400> 18
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atcagcactt ccctggtgta atcatggtac agattattaa agacacgaat gaattttaaaa 120
 catttttgac agctgccgga cacaaactcg cagtgggttca attttcttcg aaacggtgtg 180
 gtccctgcaa aaggatgttt cctgttttcc atgagctggc tgaaaacttgt cacatcaaaa 240
 caatacccac atttcagatg ttcaagaaaa gccagaaggt aaccctattc tcaagaatca 300
 aaagaataat ttgctgttat agaagtggat tcatgagcaa cctgattttt gagttttgtg 360
 gagccgatgc taaaaaattg gaagccaaga ctcaagaatt aatgtaagct gatctccaag 420
 gcaaaataca cttgtgacat ttgaaaaggc aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 480
 a 481

<210> 19
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 19

Met Val Gln Ile Ile Lys Asp Thr Asn Glu Phe Lys Thr Phe Leu Thr
 1 5 10 15

Ala Ala Gly His Lys Leu Ala Val Val Gln Phe Ser Ser Lys Arg Cys
 20 25 30

Gly Pro Cys Lys Arg Met Phe Pro Val Phe His Glu Leu Ala Glu Thr
 35 40 45

Cys His Ile Lys Thr Ile Pro Thr Phe Gln Met Phe Lys Lys Ser Gln
 50 55 60

Lys Val Thr Leu Phe Ser Arg Ile Lys Arg Ile Ile Cys Cys Tyr Arg
 65 70 75 80

Ser Gly Phe Met Ser Asn Leu Ile Phe Glu Phe Cys Gly Ala Asp Ala
 85 90 95

Lys Lys Leu Glu Ala Lys Thr Gln Glu Leu Met
 100 105

<210> 20
 <211> 1864
 <212> DNA
 <213> Homo sapiens

<400> 20
 ggccaaagag gcctattcct gtgtgcaatc agtaccttga aggcagaaca ttctgaataa 60

| | | | | | | |
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| agttggaaaa | agaacagctt | tgctttgcaa | agattgatga | cagactgggt | cctcagagggc | 120 |
| ctaggctacc | cgtcacccct | ttttccagag | cgagggcctg | gaatgaaggc | agtttatcct | 180 |
| ctgtccctgg | agcctggggg | ttgctttggc | tccttgaggt | ggaagagact | aagagggcag | 240 |
| ctgcccagag | cagctgtgtg | tacctggctc | ctctcaggct | tcctgatccc | ttccattgca | 300 |
| ctgcgcccta | tcctcagcc | agccagacag | cctccctgct | cctgaccagc | agatacgttt | 360 |
| cggagtgggt | ggtgtgggtt | ttgtgatgag | ggcagcacgt | ggtggccaag | gtggcaagct | 420 |
| gagtctcaca | ggctcactcc | ctcgttgggt | ccctgtggga | atggtaggcc | aggcccarta | 480 |
| agccatgccc | caacacgtcc | tctcctccgg | aggaagggcc | agctgccarc | tgartcagca | 540 |
| gctagtccat | agcacagcct | tataactgta | aagccaggca | ttgcccata | gcagagctgg | 600 |
| aaccagagct | tcagtcagta | agagggagga | ttaccttcag | gagaaggcaa | ggaagaaaac | 660 |
| tggctgctat | ctttatagtt | ccactgccct | aaccaagtgt | ccacattcta | aatgtgtagt | 720 |
| gtccatccct | tatgtaatag | tggtttcccg | cccaaagtga | gactttcctt | ttaattggag | 780 |
| aagggatatag | aggtagtcca | ggtgggaacg | ccagaagtgc | tgattgcca | gccattggga | 840 |
| ccacctgttc | ttgccccact | accctctagt | gggaggccaa | agtaaaggct | ggctgggtggg | 900 |
| tgtctgtgga | ttgaggatgt | ggcagggact | ggtcctccca | cctccctctg | gccaaagatg | 960 |
| ggctttgccc | gctgtgtgcc | tgtcaccacc | caccagcagt | catgccctgg | gcttcccaaa | 1020 |
| tggagaggta | gcaggcaacg | tttttaaaaa | gaaagaaaac | aggaaactgt | attgtgtcgg | 1080 |
| gggaggcggg | agggagatga | ggaaacgggt | tggattttgt | gtgtgggagg | gtattttttg | 1140 |
| ggggtagttg | tctgtaactt | tcctaagtgc | tttttttccct | tttctttttt | aaagtaagtt | 1200 |
| gcaggctttg | gcttgaaaaa | ccccaggggg | atggggggga | gaaacctgag | gctgctgccc | 1260 |
| tttatctgcc | ttcacggtac | tgtccccttc | ccccagctcc | tcctgaccc | catggggccag | 1320 |
| gcctcagacc | ttccagctaa | ccgcttccca | tgagccacta | ctctgatgtc | agcctataac | 1380 |
| caaaggagct | gggggggtcca | ggcctgggtga | ccaacctttc | tcagcccact | caatcagggg | 1440 |
| gctccccacc | tgcaggcagg | aggcaacacc | ctatctgcta | ccatcagccc | cttccagagc | 1500 |
| ccatctgccc | cgcccagccc | tgccctgccc | agccataccc | tgctctgccc | catctggggg | 1560 |
| tgccctgctc | agggatgggc | tggcagggct | gtaccagacc | tccttggtaa | gcagagactc | 1620 |
| aagaaacctc | tggggtcctg | ttttctgggc | gtgtgatccc | aggggtgcac | atggggccct | 1680 |
| tgggtgtctg | aacagaaggg | catgggaggg | agggtgcac | ccctgcagtc | ttactctgct | 1740 |
| ggtgtagcgg | gcagmtgccc | actcccaccc | cacctgcac | cgcgggctcc | tgagtcggca | 1800 |
| gattaagcat | tttataaatt | gtatttttaa | tacatgtttt | aaacttgtca | aaaaaaaaaa | 1860 |

aaaa

1864

<210> 21
<211> 102
<212> PRT
<213> Homo sapiens

<400> 21

Val Leu Pro Thr Cys Arg Gln Glu Ala Thr Pro Tyr Leu Leu Pro Ser
1 5 10 15

Ala Pro Ser Arg Ala His Leu Pro Arg Pro Ala Leu Pro Cys Pro Ala
20 25 30

Ile Pro Cys Ser Ala Pro Ser Gly Gly Ala Leu Leu Arg Asp Gly Leu
35 40 45

Ala Gly Leu Tyr Pro Ala Ser Leu Val Ser Arg Asp Ser Arg Asn Leu
50 55 60

Trp Gly Pro Val Phe Trp Ser Cys Asp Pro Arg Gly Ala His Gly Pro
65 70 75 80

Leu Gly Cys Leu Asn Arg Arg Ala Trp Glu Gly Gly Leu His Pro Cys
85 90 95

Ser Leu Thr Leu Leu Val
100

<210> 22
<211> 1041
<212> DNA
<213> Homo sapiens

<400> 22

agccctcgta ctgatttcca tcgttgcatt tacaactgct acaaaaatgc cagcactcca 60
tcgacatgaa gaagagaaat tcttcttaaa tgccaaaggc cagaaagaaa ctttaccag 120
catatgggac tcacctacca aacaactttc tgtcgttgtg ctttcaaaca atgaagaaaa 180
acggttgcct gtgatgatgg atgaagctct gagctatgta gagaagagac agaaacgaga 240
tcctgcgttc acttatgaag tgatagtagt tgatgatggc agtaaagatc agacctcaaa 300
ggtagctttt aaatattgcc agaaatatgg aagtgacaaa gtacgtgtga taaccctggt 360
gaagaatcgt ggaaaagggtg gagcgattag aatgggtata ttcagttctc gaggagaaaa 420
gatccttatg gcagatgctg atggagccac aaagtttcca gatgttgaga aattagaaaa 480

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ggggctaaat gatctacagc cttggcctaa tcaaattggct atagcatgtg gatctcgagc 540
tcatttagaa aaagaatcaa ttgctcagcg ttcttacttc cgtactcttc tcatgtatgg 600
gttccacttt ctggtgtggt tcctttgtgt caaaggaatc agggacacac agtgtggggt 660
caaattattht actcgagaag cagcttcacg gacgttttca tctctacacg ttgaacgatg 720
ggcatttgat gtagaactac tgtacatagc acagttcttt aaaattccaa tagcagaaat 780
tgctgtcaac tggacagaaa ttgaagggtc taaattagtt ccattctgga gctggctaca 840
aatgggtaaa gacctacttt ttatacgact tcgatatttg actgggtgcct ggaggcttga 900
gcaaactcgg aaaatgaatt aggttggttg cagtcttcag ttgtgttctt atgcttcagt 960
gtcacatttc atttcatttg aaactaaaat tttaagtaaa gctgaaataa acttcttgtc 1020
attgtcaaaa aaaaaaaaaa a 1041

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<210> 23
<211> 291
<212> PRT
<213> Homo sapiens

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<400> 23

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Met Pro Ala Leu His Arg His Glu Glu Glu Lys Phe Phe Leu Asn Ala
1          5          10          15

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Lys Gly Gln Lys Glu Thr Leu Pro Ser Ile Trp Asp Ser Pro Thr Lys
          20          25          30

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```

Gln Leu Ser Val Val Val Pro Ser Asn Asn Glu Glu Lys Arg Leu Pro
          35          40          45

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Val Met Met Asp Glu Ala Leu Ser Tyr Val Glu Lys Arg Gln Lys Arg
          50          55          60

```

```

Asp Pro Ala Phe Thr Tyr Glu Val Ile Val Val Asp Asp Gly Ser Lys
65          70          75          80

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```

Asp Gln Thr Ser Lys Val Ala Phe Lys Tyr Cys Gln Lys Tyr Gly Ser
          85          90          95

```

```

Asp Lys Val Arg Val Ile Thr Leu Val Lys Asn Arg Gly Lys Gly Gly
          100          105          110

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Ala Ile Arg Met Gly Ile Phe Ser Ser Arg Gly Glu Lys Ile Leu Met
          115          120          125

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Ala Asp Ala Asp Gly Ala Thr Lys Phe Pro Asp Val Glu Lys Leu Glu
 130 135 140

Lys Gly Leu Asn Asp Leu Gln Pro Trp Pro Asn Gln Met Ala Ile Ala
 145 150 155 160

Cys Gly Ser Arg Ala His Leu Glu Lys Glu Ser Ile Ala Gln Arg Ser
 165 170 175

Tyr Phe Arg Thr Leu Leu Met Tyr Gly Phe His Phe Leu Val Trp Phe
 180 185 190

Leu Cys Val Lys Gly Ile Arg Asp Thr Gln Cys Gly Phe Lys Leu Phe
 195 200 205

Thr Arg Glu Ala Ala Ser Arg Thr Phe Ser Ser Leu His Val Glu Arg
 210 215 220

Trp Ala Phe Asp Val Glu Leu Leu Tyr Ile Ala Gln Phe Phe Lys Ile
 225 230 235 240

Pro Ile Ala Glu Ile Ala Val Asn Trp Thr Glu Ile Glu Gly Ser Lys
 245 250 255

Leu Val Pro Phe Trp Ser Trp Leu Gln Met Gly Lys Asp Leu Leu Phe
 260 265 270

Ile Arg Leu Arg Tyr Leu Thr Gly Ala Trp Arg Leu Glu Gln Thr Arg
 275 280 285

Lys Met Asn
 290

<210> 24
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 24
 cnccatcgga gaacaccaga aagaacact

29

<210> 25

<211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 25
 tntctggcat atccgtcagg ttaaactcc 29

<210> 26
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 26
 cnetggttct acatcaatac cagctttcc 29

<210> 27
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 27
 tnacaacagt gatatttgag agcttcaag 29

<210> 28
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 28
 cngtaacacc tctccaacgc tttcgatgc 29

<210> 29

<211> 29
<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 29
gncaaggaca gacacgtgga aatgaagac

29

<210> 30
<211> 29
<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 30
angtccacct catagtcatg ggcctcctc

29

<210> 31
<211> 29
<212> DNA
<213> Homo sapiens

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<223> n is a, c, g, or t

<400> 31
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29

<210> 32
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<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 32
cntgggaagc ggtagctgg aaggtctga

29

<210> 33

<211> 29
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 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 33
 tntcttcttc atgtcgatgg agtgctggc

29

<210> 34
 <211> 359
 <212> PRT
 <213> Homo sapiens

<400> 34

Arg Val Lys Val Gln Leu Ala Leu Val Phe Phe Lys Asn Leu Ala Ser
 1 5 10 15

Ser Cys Thr Leu Asp Ser Ala Leu Asn Ala Ala Ser Tyr Tyr Asn Phe
 20 25 30

Thr Val Leu Lys Val Pro Arg Ser Met Thr Asp Pro Gln Asn Met Glu
 35 40 45

Phe Gln Val Pro Val Ile Leu Thr Ser Gln Ala Asn Ala Pro Leu Leu
 50 55 60

Ala Gly Asn Thr Cys Gln Asn Val Val Ser Gln Val Thr Tyr Glu Ile
 65 70 75 80

Glu Thr Asn Gly Thr Phe Gly Ile Gln Lys Val Ser Val Ser Leu Gly
 85 90 95

Gln Thr Asn Leu Thr Val Glu Pro Gly Ala Ser Leu Gln Gln His Phe
 100 105 110

Ile Leu Arg Phe Arg Ala Phe Gln Gln Ser Thr Ala Ala Ser Leu Thr
 115 120 125

Ser Pro Arg Ser Gly Asn Pro Gly Tyr Ile Val Gly Lys Pro Leu Leu
 130 135 140

Ala Leu Thr Asp Asp Ile Ser Tyr Ser Met Thr Leu Leu Gln Ser Gln
 145 150 155 160

Gly Asn Gly Ser Cys Ser Val Lys Arg His Glu Val Gln Phe Gly Val
165 170 175

Asn Ala Ile Ser Gly Cys Lys Leu Arg Leu Lys Lys Ala Asp Cys Ser
180 185 190

His Leu Gln Gln Glu Ile Tyr Gln Thr Leu His Gly Arg Pro Arg Pro
195 200 205

Glu Tyr Val Ala Ile Phe Gly Asn Ala Asp Pro Ala Gln Lys Gly Gly
210 215 220

Trp Thr Arg Ile Leu Asn Arg His Cys Ser Ile Ser Ala Ile Asn Cys
225 230 235 240

Thr Ser Cys Cys Leu Ile Pro Val Ser Leu Glu Ile Gln Val Leu Trp
245 250 255

Ala Tyr Val Gly Leu Leu Ser Asn Pro Gln Ala His Val Ser Gly Val
260 265 270

Arg Phe Leu Tyr Gln Cys Gln Ser Ile Gln Asp Ser Gln Gln Val Thr
275 280 285

Glu Val Ser Leu Thr Thr Leu Val Asn Phe Val Asp Ile Thr Gln Lys
290 295 300

Pro Gln Pro Pro Arg Gly Gln Pro Lys Met Asp Trp Lys Trp Pro Phe
305 310 315 320

Asp Phe Phe Pro Phe Lys Val Ala Phe Ser Arg Gly Val Phe Ser Gln
325 330 335

Lys Cys Ser Val Ser Pro Ile Leu Ile Leu Cys Leu Leu Glu Leu Gly
340 345 350

Val Leu Asn Leu Glu Thr Met
355

<210> 35
<211> 2696
<212> DNA
<213> Homo sapiens

<400> 35
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60

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| ttatctttgc ttctcacat ccttatctct ctctctataa actggctccc gtcacttcca | 180 |
| tgatcccttc agtggcttct gagctggctt ccctgacccc aaagcctcag ccttccagtc | 240 |
| tcctacaaa atctcagcaa gttcatttta ggtaaaatt tggacatatt ttaaatacgg | 300 |
| ctcaccactt catgtgaaaa tgatggcacc ctaccaagca gtttgcagag ttacggtaac | 360 |
| tgtttcatgc taatgatgtt attcatccag ttacaatttt ctcaaaactc ctttgggcac | 420 |
| tctttatttt taatcaaatt ttaaagccaa tatttcattt tgagaatatg aattaaattg | 480 |
| ggaaattcat ccttgtggta cagtttacag atttttaatg tttaccatt tatcctgttt | 540 |
| tttgatatat taatttccca tatagctcca gagttatgtg atattatttc tttgccagta | 600 |
| tattagaaaa tgattaattt ctcatgacca acttctgaaa agaaagaccc aatgcaaaat | 660 |
| gcaatctatt acaattattt ttttgaataa aaaagaatat attatagttc tttaacattt | 720 |
| gatattttta atttgacata ttcttgatat ttgtaagaaa tttccactga atgaatttta | 780 |
| cacaattcag atactaccaa ttaactaatt ctagcctaaa caaataacat tatttttaaa | 840 |
| taacaaaatc tttaaaaata attttctatt ttgaactttt agccataatg taagaaaata | 900 |
| aaattttcta gcagaataat caaagagtga aacaaagttc caacatgttt tttctttgca | 960 |
| attaaacatg gcacttttac agttatttat tattcatatc agtgcactta ccgacttcat | 1020 |
| attttcaaat caaaatacag tgtttttctc cagtgaatc cttatttctca tgactgatag | 1080 |
| aaaacattgc caattttgat atttccagag ttaatgttaa attatttgaa agaaaattat | 1140 |
| ttaaataat aaaaatagac atttcaagac tatttcttat cacataattc aaaaagtact | 1200 |
| tggatcaaat cctacagagt ttctccacta aaattctact tgtgcagagg gcattgaaac | 1260 |
| gcatgaaaat caacagcagc ttagttaggt taattaattc ggttaattaa gcacctacta | 1320 |
| catgctcagc tctatgctag gtgtcatgag gaattaaaag gacatgtaat gcacattttc | 1380 |
| tgatttcaag gagctttaaa tattattgtg tagaaaaagt taacatctat gaaaatagaa | 1440 |
| gtggggcaat tttgtgtta attccatggt ccagatacat caaaaaatca atgtgggctg | 1500 |
| tcaaagaagg tttcttgata gtcatgagtc agcctgattc ttgaaaggat atgtggaata | 1560 |
| taaaatttta tttatattcc ttttgagaaa atactgagaa aaccatcttc cctggaaaag | 1620 |
| agaacgtatt gtaaagaaag tacatgaaat tgaagggtga atatccaaca tccccacac | 1680 |
| tgccccagtg tctctgtcc ctactgagc ctactatta ttcttcatag ccctatcact | 1740 |
| acctagtcta gtattcactg aactgtgtca tccactagaa tatgagcata atgagagcag | 1800 |
| agactacacc tgtcggttca gtattctatc ctgagcacat agaatggtac ctggcacata | 1860 |

gcagatgcta aaataaaatt taaatgaata aattaattca atcaacaact tcaaggtggt 1920
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acaatgaata aagccaagcc agttcctgcc cccgtggagc ttgtagtcaa gacattgaac 2040
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<210> 36
<211> 112
<212> PRT
<213> Homo sapiens

<400> 36

Met Thr Leu Ser Leu Gly Ile Gln Thr His Thr Ser Thr Tyr Leu Pro
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Leu Gln Pro His Leu Pro Pro Leu Thr Arg Ala His His Ile Ile His
20 25 30

Gln Asn Glu Thr Ala Pro Ser Ser Ser Glu His Ile Thr Leu Gln Asn
35 40 45

Phe His Leu Cys Leu Val Thr Leu Ile Arg His Ser Lys Ala Phe Pro
50 55 60

Gln Cys Phe Arg Ala Leu Pro Phe Leu Pro Phe Ile His Thr Pro Leu
65 70 75 80

Cys Ile Phe Ile Arg Thr Leu His Asn Leu Ile Tyr Leu Ser Ile Tyr
85 90 95

His Ile Leu Leu Lys Asn Cys Phe His Phe Ser Leu Leu Thr Arg Met
100 105 110

<210> 37
<211> 3614
<212> DNA
<213> Homo sapiens

<400> 37
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| | |
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| gctcctagtg actggacatg cctggaagac ccctcagcct tctgtttgca gaacgttcat | 3120 |
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| gcctggcggg ctctggtcac catgtgtcta tctgaagggt gcactggcca gcatgggctt | 3240 |
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<210> 38
<211> 229
<212> PRT
<213> Homo sapiens

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<400> 38

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Val Lys His Ser Ala Gln Ser Leu Glu Gln Glu Pro Trp Asp His Thr
1          5          10          15

```

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Thr Thr Thr Thr Thr Asn Arg Pro Gly Thr Thr Arg Ala Pro Ala Lys
20          25          30

```

```

Pro Pro Gly Ser Gly Leu Asp Leu Ala Asp Ala Leu Asp Asp Gln Asp
35          40          45

```

```

Asp Gly Arg Arg Lys Pro Gly Ile Gly Gly Arg Glu Arg Trp Asn His
50          55          60

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```

Val Thr Thr Thr Thr Lys Arg Pro Val Thr Thr Arg Ala Pro Ala Asn
65          70          75          80

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```

Thr Leu Gly Asn Asp Phe Asp Leu Ala Asp Ala Leu Asp Asp Arg Asn
85          90          95

```

```

Asp Arg Asp Asp Gly Arg Arg Lys Pro Ile Ala Gly Gly Gly Gly Phe
100          105          110

```

```

Ser Asp Lys Asp Leu Glu Asp Ile Val Gly Gly Gly Glu Tyr Lys Pro
115          120          125

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Asp Lys Gly Lys Gly Asp Gly Arg Tyr Gly Ser Asn Asp Asp Pro Gly
130          135          140

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Ser Gly Met Val Ala Glu Pro Gly Thr Ile Ala Gly Val Ala Ser Ala
145          150          155          160

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Leu Ala Met Ala Leu Ile Gly Ala Val Ser Ser Tyr Ile Ser Tyr Gln
165 170 175

Gln Lys Lys Phe Cys Phe Ser Ile Gln Gln Gly Leu Asn Ala Asp Tyr
180 185 190

Val Lys Gly Glu Asn Leu Glu Ala Val Val Cys Glu Glu Pro Gln Val
195 200 205

Lys Tyr Ser Thr Leu His Thr Gln Ser Ala Glu Pro Pro Pro Pro Pro
210 215 220

Glu Pro Ala Arg Ile
225

<210> 39
<211> 1077
<212> DNA
<213> Homo sapiens

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aattattggg aataaaaaaga caatctaadc gtcaaaaaaa aaaaaaaaaa aaaaaaa 1077

<210> 40
 <211> 108
 <212> PRT
 <213> Homo sapiens

<400> 40

Met Asp Gly Gly Lys Arg Glu Arg Lys Thr Arg Glu Asn Gln Gln Asn
 1 5 10 15

Val Arg Cys Lys Glu Ser Ile Phe Ala Gly Phe Val Asn Phe Ala Thr
 20 25 30

Ala Ala Arg Glu Ser Thr Ser Ser Arg Asp Gly Leu Pro Pro Pro Leu
 35 40 45

Leu Thr Leu Ser Pro Ala Ala Val Ser Arg Thr Ser Asp Phe Leu Pro
 50 55 60

Arg Arg Gln Ser Leu Asp Glu Ala Lys Glu Ala Ala Pro Ala Pro Pro
 65 70 75 80

Thr Arg Ala Ala Ala Arg Gly Cys Tyr Ser Ser Thr Pro Ser Ala Lys
 85 90 95

Glu Gly Gly Ala Glu Arg Ala Gly Ser Ser Val Gly
 100 105

<210> 41
 <211> 588
 <212> DNA
 <213> Homo sapiens

<400> 41

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 agatttcgag ccatgtttca tgacaagaag ttcaagttga actatgccgt ggataaaaga 180
 gggcgcccca ttagccatag cactacagag gatttgaagc gtttttacga ctttcagat 240
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 aaaaaaaccc agactaaaa agaaatcgat tcaaaaaatc tagttgagaa aaagaaagaa 360
 accaagaagg ctaatcacia ggggttctgaa aataaaactg atttagataa ttctatagga 420
 attaaaaaaa tgaaaacctc atgtaaatct aagatagatt caaacataag tccgaagaag 480

gatagcaaag aatttacaca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 540
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 588

<210> 42
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 42

Met Ser Ser Lys Gln Glu Ile Met Ser Asp Gln Arg Phe Arg Arg Val
 1 5 10 15

Ala Lys Asp Pro Arg Phe Trp Glu Met Pro Glu Lys Asp Arg Lys Val
 20 25 30

Lys Ile Asp Lys Arg Phe Arg Ala Met Phe His Asp Lys Lys Phe Lys
 35 40 45

Leu Asn Tyr Ala Val Asp Lys Arg Gly Arg Pro Ile Ser His Ser Thr
 50 55 60

Thr Glu Asp Leu Lys Arg Phe Tyr Asp Leu Ser Asp Ser Asp Ser Asn
 65 70 75 80

Leu Ser Gly Glu Asp Ser Lys Ala Leu Ser Gln Lys Lys Ile Lys Lys
 85 90 95

Lys Lys Thr Gln Thr Lys Lys Glu Ile Asp Ser Lys Asn Leu Val Glu
 100 105 110

Lys Lys Lys Glu Thr Lys Lys Ala Asn His Lys Gly Ser Glu Asn Lys
 115 120 125

Thr Asp Leu Asp Asn Ser Ile Gly Ile Lys Lys Met Lys Thr Ser Cys
 130 135 140

Lys Phe Lys Ile Asp Ser Asn Ile Ser Pro Lys Lys Asp Ser Lys Glu
 145 150 155 160

Phe Thr Gln

<210> 43
 <211> 2773
 <212> DNA
 <213> Homo sapiens

<400> 43

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| catgcatctc cttaaaggaag aactgtgtag caccattgat cacaatgtaa catttccatg | 180 |
| ctgcattaag ggtgtctctc tctaatacatg attgtacctg tctcttcctg ggtaaaggga | 240 |
| gattttttttt ttttaatgtg taaagaattg atgcsagcca ggaacatgtc tgtagtccca | 300 |
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| cataatgtca gtaaatccct ctcaattgac aagggactgg attcatcttg ccttgagacg | 1680 |
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| gcaatgctcg ccataacaaa attccttaaa aataaaaaag ctaatgttat agcaacaaaa | 1800 |

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<210> 44
<211> 102
<212> PRT
<213> Homo sapiens

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<400> 44

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Met Arg Ser Leu Tyr Cys Ser Arg Thr Gln Arg Asp Ser Leu Phe Ser
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```

Gly Ala Asp Val Pro Ala Trp Arg Leu Ala Pro Lys His Gly Ser Cys
          20           25           30

```

```

Ile Val Leu Arg Glu Lys Ala Phe Ile Leu Val Leu Leu Ile Gly Val
          35           40           45

```

```

Thr Tyr Cys Leu Ile Cys Val His Phe Leu Thr Glu Arg Gln Thr Ile
          50           55           60

```

```

Glu Lys Val Cys Val Asn Arg Glu Gln Phe Ile Lys Pro Ile Ala Phe
65           70           75           80

```

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Trp Gln Gly Leu Val Ile
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<210> 45
<211> 3119
<212> DNA
<213> Homo sapiens

<400> 45
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| cagagaaaac aagttggaga aaacaaaagg ctgccacctg tatgctatta acactcacca | 1560 |
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| acacaacaag ccaagcgggg tcaccagcac ctcatgttta tctcccctgt ctgagtcacc | 1680 |
| tggtgaagaa ttccagtaca tcaggagagat ctgtctgtct gactctccca tggatgatgac | 1740 |
| cttagtggat gggccagctg aagagagtga caatctcatc tgtgtggctt atcgacacca | 1800 |
| atttgatgtg gtgaatgaga gcacaggaga agccttcagg ctgcaccacg tggaggccaa | 1860 |
| cagggttaat tttgttgag ctattgatgt gtacgaagat ggagaagctg gtttgctgtt | 1920 |
| gtgttacaac tacagttgca tctataaaaa ggtttgcccc tttaatgggtg gctctttttt | 1980 |
| ggttcaacct tctgcgtcag atttccagtt ctgttggaac caggctccct atgcaattgt | 2040 |
| ctgtgctttc ccgtatctcc tggccttcac caccgactcc atggagatcc gcctgggtgg | 2100 |
| gaacgggaac ctggtccaca ctgcagtcgt gccgcagctg cagctgggtg cctccaggtc | 2160 |
| ggatatatac ttcacagcaa ctgcagctgt gaatgaggtc tcctctggag gcagctccaa | 2220 |
| gggggccagt gcccgaatt ctctcagac acccccgggc cgagatactc cagtatttcc | 2280 |
| ttcttccctg ggggaagggt aaattcaatc aaaaaatctg tacaagattc cacttagaaa | 2340 |
| cctcgtgggc agaagcatcg aacgacctct gaagtcaccc ttagtctcca aggtcatcac | 2400 |
| cccaccact cccatcagtg tgggccttgc tgccattcca gtcacgcact ccttgtccct | 2460 |
| gtctcgcag gagatcaaag aaatagcaag caggaccgc agggaaactac tgggcctctc | 2520 |
| ggatgaagggt ggaccaagt cagaaggagc gccaaaggcc aaatcaaac cccggaagcg | 2580 |
| gttagaagaa agccaaggag gcccgaagcc aggggcagtg aggtcatcta gcagtgcag | 2640 |
| gatcccatca ggctccttgg aaagtgcctc tacttccgaa gccaacctg aggggcactc | 2700 |
| agccagctct gaccaggacc ctgtggcaga cagagagggc agcccgtct cgggcagcag | 2760 |
| ccccttccag ctcacggctt tctccgatga agacattata gacttgaagt aacagagttg | 2820 |
| aatctcattt gccatcttta gttttcttat ggaggtttat actctttaa cagttctgat | 2880 |
| gtaatttctc aacaaaatgt ggcttttagc ctgtcagtga tctattggac caaaccttct | 2940 |
| gcacactcgg ccagttccct ctccaatgtc cggtgccatc tttcctgacc tttgtttctt | 3000 |
| tctgttcagg aaccatcagt ccccttgtaa taaagggtgt agatttcatt gaggttttag | 3060 |
| attgaaactt tgaataaatc aaaaatactc attcttaaaa aaaaaaaaaa aaaaaaaaaa | 3119 |

<211> 322
 <212> PRT
 <213> Homo sapiens

<400> 46

Met Asn Leu Asp Lys Phe Glu Lys Gly Pro Arg Glu Ile Phe His Pro
 1 5 10 15

Glu Ile Gln Lys Asp Leu Leu Val Leu Glu Glu Gln Glu Gly Ser Val
 20 25 30

Asn Phe Lys Phe Gly Val Leu Phe Ala Lys Asp Gly Gln Leu Thr Asp
 35 40 45

Asp Glu Met Phe Ser Asn Glu Ile Gly Ser Glu Pro Phe Gln Lys Phe
 50 55 60

Leu Asn Leu Leu Gly Asp Thr Ile Thr Leu Lys Gly Trp Thr Gly Tyr
 65 70 75 80

Arg Gly Gly Leu Asp Thr Lys Asn Asp Thr Thr Gly Ile His Ser Val
 85 90 95

Tyr Thr Val Tyr Gln Gly His Glu Ile Met Phe His Val Ser Thr Met
 100 105 110

Leu Pro Tyr Ser Lys Glu Asn Lys Gln Gln Val Glu Arg Lys Arg His
 115 120 125

Ile Gly Asn Asp Ile Val Thr Ile Val Phe Gln Glu Gly Glu Glu Ser
 130 135 140

Ser Pro Ala Phe Lys Pro Ser Met Ile Arg Ser His Phe Thr His Ile
 145 150 155 160

Phe Ala Leu Val Arg Tyr Asn Gln Gln Asn Asp Asn Tyr Arg Leu Lys
 165 170 175

Ile Phe Ser Glu Glu Ser Val Pro Leu Phe Gly Pro Pro Leu Pro Thr
 180 185 190

Pro Pro Val Phe Thr Asp His Gln Glu Phe Arg Asp Phe Leu Leu Val
 195 200 205

Lys Leu Ile Asn Gly Glu Lys Ala Thr Leu Glu Thr Pro Thr Phe Ala
 210 215 220

Gln Lys Arg Arg Arg Thr Leu Asp Met Leu Ile Arg Ser Leu His Gln
 225 230 235 240

Asp Leu Met Pro Asp Leu His Lys Asn Met Leu Asn Arg Arg Ser Phe
 245 250 255

Ser Asp Val Leu Pro Glu Ser Pro Lys Ser Ala Arg Lys Lys Glu Glu
 260 265 270

Ala Arg Gln Ala Glu Phe Val Arg Ile Gly Gln Ala Leu Lys Leu Lys
 275 280 285

Ser Ile Val Arg Gly Asp Ala Pro Ser Ser Leu Ala Ala Ser Gly Ile
 290 295 300

Cys Lys Lys Glu Met Thr Phe His Gln Cys Pro Cys Leu Thr Glu Leu
 305 310 315 320

Cys Gln

<210> 47
 <211> 1592
 <212> DNA
 <213> Homo sapiens

<400> 47
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 ctccataaac cccctgacct tgggaaactg ttgttaacag ttacttgggt aacttttcag 120
 atattttgta tgcattgtaca aatgtgagta tctaattgtaa aaaaatcaaa ccaagataaa 180
 gtgtaaaactg ctatgatgga atcctgcctt gttctgctat tagtcttctg tttaataatc 240
 agctttggta ttaggacagt ggtaggaaga agccagtatg tcctgcaaca taatttgtgg 300
 ttctggactg gtcaggattt cctgaatgca gcctttatct ggaagctctg cccttctcca 360
 tctgggatac gctttttcat ccatcaaaac tgtcatctcc ctctgtgaag ccttccttga 420
 ctattctctg tccctctttc ctctcttccc acaaacacaa ctgtgtacgc gtgtcaccaa 480
 agagttaatc gtgcttttct ctgtgctact tttatacsta gtatatgggc cattgttttg 540
 cacttaatac actctcttgt aatgatttgt ttacatgtca gtctcccagc cagactgaga 600
 gctcaccaag ggcagaagcc gtgttttgtt tactgctgta ttcttggtac ctggtacaat 660
 gcttggcata cagttggatg aacgggaaag taatctgagc tgccggtgct gtggcagtg 720
 aaagtgggca tatttgtgcc cttggaccag atgtagccct tgatgcattt tgcaggaaca 780

cggcttagtt attgtttact ttgaagccct tttgcctcta ctctctccca tataatcttct 840
 cctgacaggg tgaagtcacc tatagcattt cctagtgtat ggaagtatta atttctttct 900
 ttactggaag agctactagc ttttcttcat acagtttcct ctgctccagt ttcataagtt 960
 tctttttggc ttgtatctgt ttaggatcag gtgatatggc ttcattttctc atgactgaag 1020
 cccggcaaca taacactgaa attcgaatgg cagtcagcaa agtggctgat aaaatggatc 1080
 atctcatgac taaggttgaa gagttacaga aacatagtgc tggcaattcc atgcttattc 1140
 ctagcatgtc agttacaatg gaaacaagca tgattatgag caacatccag cgaatcattc 1200
 aggccaaggt gacagaggag ttagcagcgg ccactgcaca gktctctcat ctgcagctga 1260
 aaatgacttg ctcacaaaa aaaggaaaca gagctgcaga tgcagctgac agaaagcctg 1320
 aaggagacag atcttctcag gggccagctc accaaagtgc aggcaaagct ctcagagctc 1380
 caagaaacyt ctgagcaagc acagtccaaa ttcaaaagtg aaaagcagaa ccggaaacaa 1440
 ctggaactca aggtgacatc cctggaggag gaactgactg accttcgagt tgagaaggag 1500
 tccttggaag aggtaagctc tacaaccagc tttgccagaa ttagctgttt aataaacatt 1560
 tttattttcc ttttacaaaa aaaaaaaaaa aa 1592

<210> 48
 <211> 171
 <212> PRT
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (122)..(122)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (171)..(171)
 <223> Xaa can be any naturally occurring amino acid

<400> 48

Met Glu Val Leu Ile Ser Phe Phe Thr Gly Arg Ala Thr Ser Phe Ser
 1 5 10 15

Ser Tyr Ser Phe Leu Cys Ser Ser Phe Ile Ser Phe Phe Leu Ala Cys
 20 25 30

Ile Cys Leu Gly Ser Gly Asp Met Ala Ser Phe Leu Met Thr Glu Ala
 35 40 45

Arg Gln His Asn Thr Glu Ile Arg Met Ala Val Ser Lys Val Ala Asp

| | | |
|---|-----|---------|
| 50 | 55 | 60 |
| Lys Met Asp His Leu Met Thr Lys Val Glu Glu Leu Gln Lys His Ser | | |
| 65 | 70 | 75 80 |
| Ala Gly Asn Ser Met Leu Ile Pro Ser Met Ser Val Thr Met Glu Thr | | |
| | 85 | 90 95 |
| Ser Met Ile Met Ser Asn Ile Gln Arg Ile Ile Gln Ala Lys Val Thr | | |
| | 100 | 105 110 |
| Glu Glu Leu Ala Ala Ala Thr Ala Gln Xaa Ser His Leu Gln Leu Lys | | |
| | 115 | 120 125 |
| Met Thr Cys Ser Pro Lys Lys Gly Asn Arg Ala Ala Asp Ala Ala Asp | | |
| | 130 | 135 140 |
| Arg Lys Pro Glu Gly Asp Arg Ser Ser Gln Gly Pro Ala His Gln Ser | | |
| 145 | 150 | 155 160 |
| Ala Gly Lys Ala Leu Arg Ala Pro Arg Asn Xaa | | |
| | 165 | 170 |

<210> 49
 <211> 1694
 <212> DNA
 <213> Homo sapiens

| | |
|--|-----|
| <400> 49 | |
| gggaaacggg aagccgctgc aagtcaccg cctcagctac ccagattggg atctgcccag | 60 |
| gcccgccttta tggactagt tgggcggcag gtcctttcc gtcctgccc tgctgtacc | 120 |
| cgctccttgg agacccctg tatccctccc gcaaggtgga atccgcaggc tggaggctcc | 180 |
| caggggaggc aaacgcctgg cctgcccctg cccacgccg caccatgacc ctctgctgc | 240 |
| tgccccttct gctggcctct ctgctcgcgt cctgctcctg taacaaagcc aacaagcaca | 300 |
| agccatggat tgaggcagag taccaggga tcgtcatgga gaatgacaac acggtcctac | 360 |
| tgaatccacc actctttgcc ttggacaagg atgcccgcgt gcgctatgca ggtgagatct | 420 |
| gcggcttccg gctccatggg tctgggggtgc cctttgaggc tgtgatcctt gacaaggcga | 480 |
| caggagaggg gctgatccgg gccaaaggagc ctgtggactg cgaggcccag aaggaacaca | 540 |
| ccttcacat ccaggcctat gactgtggcg agggccccga cggggccaac accaagaagt | 600 |
| cccacaaggc cactgtgcat gtgcgggtca acgatgtgaa cgagtttgcc ccagtgtttg | 660 |
| tggaacggct gtatcgtgcg gctgtgacag aggggaagct gtacgatcgc atcctgcggg | 720 |

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tggaagccat tgacggtgac tgctcccccc agtacagcca gatctgctac tatgagattc 780
tcacacccaa cacccttttc ctcatgtgaca atgacgggaa cattgagaac acagagaagc 840
tgcagtacag tgggtgagagg ctctataagt ttacagtgac agcttatgac tgtgggaaga 900
agcgggcagc agatgatgct gaggtggaga ttcaggtgaa gcccacctgt aaaccagct 960
ggcaaggctg gaacaaaagg atcgaatatg caccaggtgc tgggagcttg gctttgttcc 1020
ctggtatccg cctggagacc tgtgatgaac cactctggaa cattcaggcc accatagagc 1080
tgcagaccag ccatgtggcc aagggtgtg accgtgacaa ctactcagag cgggcgctgc 1140
ggaaactctg tgggtgctgcc actggggagg tggatctgtt gcccattgcct ggccccaatg 1200
ccaactggac agcaggactc tcggtgcact acagccagga cagcagcctg atctactggt 1260
tcaatggcac ccaggctgtg caggtgcccc tgggtggccc cagtgggctg ggctctgggc 1320
cccaggacag cctcagtgc cacttcaccc tgtccttctg gatgaagcat ggcgtaactc 1380
ccaacaaggg caagaaggaa gaggaacca tcgtatgtaa cactgtccag aatggtgagc 1440
ctccctcca ggcactagcc agagggggaa actggcttct tgtccgcct ctgtcactgc 1500
ccagtgtgtg actgtgaaca ggtcacttcc cctctcttca tttgtgaggt gcaagtgcc 1560
ggtgtgatat gccttgattc tgtgctttat cccaacatg acatgttgga tcgtaaaaaa 1620
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1680
aaaaaaaaa aaaa 1694

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<210> 50
<211> 428
<212> PRT
<213> Homo sapiens

```

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<400> 50

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Met Thr Leu Leu Leu Leu Pro Leu Leu Leu Ala Ser Leu Leu Ala Ser
1           5           10           15

```

```

Cys Ser Cys Asn Lys Ala Asn Lys His Lys Pro Trp Ile Glu Ala Glu
          20           25           30

```

```

Tyr Gln Gly Ile Val Met Glu Asn Asp Asn Thr Val Leu Leu Asn Pro
          35           40           45

```

```

Pro Leu Phe Ala Leu Asp Lys Asp Ala Pro Leu Arg Tyr Ala Gly Glu
          50           55           60

```

```

Ile Cys Gly Phe Arg Leu His Gly Ser Gly Val Pro Phe Glu Ala Val
65           70           75           80

```

Ile Leu Asp Lys Ala Thr Gly Glu Gly Leu Ile Arg Ala Lys Glu Pro
85 90 95

Val Asp Cys Glu Ala Gln Lys Glu His Thr Phe Thr Ile Gln Ala Tyr
100 105 110

Asp Cys Gly Glu Gly Pro Asp Gly Ala Asn Thr Lys Lys Ser His Lys
115 120 125

Ala Thr Val His Val Arg Val Asn Asp Val Asn Glu Phe Ala Pro Val
130 135 140

Phe Val Glu Arg Leu Tyr Arg Ala Ala Val Thr Glu Gly Lys Leu Tyr
145 150 155 160

Asp Arg Ile Leu Arg Val Glu Ala Ile Asp Gly Asp Cys Ser Pro Gln
165 170 175

Tyr Ser Gln Ile Cys Tyr Tyr Glu Ile Leu Thr Pro Asn Thr Pro Phe
180 185 190

Leu Ile Asp Asn Asp Gly Asn Ile Glu Asn Thr Glu Lys Leu Gln Tyr
195 200 205

Ser Gly Glu Arg Leu Tyr Lys Phe Thr Val Thr Ala Tyr Asp Cys Gly
210 215 220

Lys Lys Arg Ala Ala Asp Asp Ala Glu Val Glu Ile Gln Val Lys Pro
225 230 235 240

Thr Cys Lys Pro Ser Trp Gln Gly Trp Asn Lys Arg Ile Glu Tyr Ala
245 250 255

Pro Gly Ala Gly Ser Leu Ala Leu Phe Pro Gly Ile Arg Leu Glu Thr
260 265 270

Cys Asp Glu Pro Leu Trp Asn Ile Gln Ala Thr Ile Glu Leu Gln Thr
275 280 285

Ser His Val Ala Lys Gly Cys Asp Arg Asp Asn Tyr Ser Glu Arg Ala
290 295 300

Leu Arg Lys Leu Cys Gly Ala Ala Thr Gly Glu Val Asp Leu Leu Pro
305 310 315 320

Met Pro Gly Pro Asn Ala Asn Trp Thr Ala Gly Leu Ser Val His Tyr
 325 330 335

Ser Gln Asp Ser Ser Leu Ile Tyr Trp Phe Asn Gly Thr Gln Ala Val
 340 345 350

Gln Val Pro Leu Gly Gly Pro Ser Gly Leu Gly Ser Gly Pro Gln Asp
 355 360 365

Ser Leu Ser Asp His Phe Thr Leu Ser Phe Trp Met Lys His Gly Val
 370 375 380

Thr Pro Asn Lys Gly Lys Lys Glu Glu Glu Thr Ile Val Cys Asn Thr
 385 390 395 400

Val Gln Asn Gly Glu Pro Pro Leu Gln Ala Leu Ala Arg Gly Gly Asn
 405 410 415

Trp Leu Leu Val Pro Pro Leu Ser Leu Pro Ser Val
 420 425

<210> 51
 <211> 1309
 <212> DNA
 <213> Homo sapiens

<400> 51
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 gtcactttgc ctggacagga ggaaccctgg gacatccgga acctgctcat ctggatcaag 120
 aagaatttgc taaaagagcg gccagagttg ttcattccagg gagacagcgt gcggccagga 180
 attctggtgc tgattaacga tgccgactgg gagctactgg gtgagctgga ctaccagctt 240
 caggaccagg acagcgtcct cttcatctcc actctgcacg gcggctgagg gcccttctct 300
 gggcctgggc acccttagag gggagaacga agcaatcaga catccccttg ggccctgctt 360
 ccaggtctcc ctgtccccct tgctgcctt ctccctgct ctgtccccta agctccctcc 420
 aggcagggaa aagaggccag gtgctaaaaa tgagcctttc tcaagcacgt gagcagcgga 480
 aggcagacag gcgccagagc ccagcactcc cttttccagc agctgtggtg ggggagggtt 540
 cccctccagt ttgtcaagag ttgaaggagg ctctgtggcc aggtgacctg gctgccttcc 600
 actccttgta cctcagtcta aacatggagt ggccgctgac aaggcgctcc agccccagag 660
 ccagcgtctt catggggaag atgaatggac ctgagtagct gaaggaaggc ccctccctac 720
 ccaaagactg gaggcttctc agcctcaatt tccctgtctg tacagctgag ggctctgcct 780

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gtccccact gctatcagta tggaaccca gctggggtcc cctattgagt gccgactccc      840
cccaccgcca gcagctgctc ctccagccac acccttcctg ctccccccac ccytagccct      900
tgaccctggc tggcctgccc cgctccacag gccaccagat gggctcctga gaccctcccc      960
aggctgctta cagctcattc tgctgggggt agagatgagg ggagggagta agttaaacct      1020
tggactagca agtagaagcc tgggggggat cgtgtgcctc agtttcctcc tccacaactg      1080
aatatagtgg ctgaaaactg gggagatact tgatggcgcg aatgtccgtt ttctctccct      1140
tcccacctcc tgcaggaagc aggacggggc aggcagcacc tggtaggcac agtgctttgc      1200
ccctcctccc cttcccttct ggaagtcttg gggcctcagt gcttgcaaca gccggccttg      1260
ggcaaataaa agactagggt gtttactaaa aaaaaaaaaa aaaaaaaaaa      1309

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<210> 52
<211> 54
<212> PRT
<213> Homo sapiens

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<400> 52
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Met Ala Arg Met Ser Val Phe Ser Pro Phe Pro Pro Pro Ala Gly Ser
1           5           10           15

```

```

Arg Thr Gly Gln Ala Ala Pro Gly Arg His Ser Ala Leu Pro Leu Leu
20           25           30

```

```

Pro Phe Pro Ser Gly Ser Leu Gly Ala Ser Val Leu Ala Thr Ala Gly
35           40           45

```

```

Leu Gly Gln Ile Lys Asp
50

```

```

<210> 53
<211> 1740
<212> DNA
<213> Homo sapiens

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<400> 53
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ggcccgtgcg ctccatcaac cacgccagcc tcattctctgc actctcccgg gactatcgca      60
acctgaagcc cagtgtgtgt gcccacaga gaaagatgcc actggatgac accaaactga      120
ttatccacca gacactcagc gtcttagaag atattgtgga gaatatctcg ggggagtcca      180
ccaagtctcg acagatttgc taccagtcgc tgcaggaatc tgttcaggtc tccctggccc      240
tctttccagc ttttatccat cagtcagatg tgactgatga gatgctgagc ttcttctca      300
ctctgtttcg aggcttaga gtacagatgg gtgtgccttt cactgagcaa atcatacaga      360

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```

ctttcctcaa catgtttacc agagagcagt tagccgagag catcctccac gagggcagca 420
caggctgccg ggtggtggag aagtttctga agatcctgca ggtggtggtc caggagccag 480
gccaggtggt caagcccttc ctccccagca tcatcgccct gtgcatggag caagtgtatc 540
ccatcattgc cgagcgctcc tcccctgatg tgaaggccga gctgtttgag ctccttttcc 600
ggacgctcca tcacaactgg aggtacttct tcaagtccac cgtgctggcc agtgtccaga 660
gggggatcgc tgaggagcag atggagaatg agccccagtt cagtgccatc atgcaggctt 720
tcggacagtc ctttctccag cccgacatcc acctttttta acaaaatctc ttctacttgg 780
agactctcaa caccaagcag aagctgtacc acaagaagat cttccggact gccatgctgt 840
tccagtttgt gaacgtgctg ctccaggtcc tgggccacaa gtcccatgat cttctgcagg 900
aggagattgg catcgccatc tacaacatgg cctcagtcga ctttgatggc ttctttgccg 960
ccttcctccc agagttcctg accagctgtg atgggtgtga tgccaaccag aaaagtgtgc 1020
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ctaccttcca ccacagatgt ctcccagatg ggccttggtc aactccttg gcttctccca 1260
ccgcaagcaa cgctgcctgc ctctgccgct cctccacatc ttgccgctgc ccagcagagc 1320
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ccccgcccc attgccttga ratytytgct ctttgtcaga gatttgcaaa gactcamgtt 1620
tttgttgttt tctcatcatt ccattgtgat actaagaaac taagaagctt aatgaaaaga 1680
aataaaatgc ctatgttggt gttctaggrr aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1740

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<210> 54
<211> 350
<212> PRT
<213> Homo sapiens

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<400> 54
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```

Met Pro Leu Asp Asp Thr Lys Leu Ile Ile His Gln Thr Leu Ser Val
1           5           10           15

```

```

Leu Glu Asp Ile Val Glu Asn Ile Ser Gly Glu Ser Thr Lys Ser Arg
20           25           30

```

Gln Ile Cys Tyr Gln Ser Leu Gln Glu Ser Val Gln Val Ser Leu Ala
 35 40 45
 Leu Phe Pro Ala Phe Ile His Gln Ser Asp Val Thr Asp Glu Met Leu
 50 55 60
 Ser Phe Phe Leu Thr Leu Phe Arg Gly Leu Arg Val Gln Met Gly Val
 65 70 75 80
 Pro Phe Thr Glu Gln Ile Ile Gln Thr Phe Leu Asn Met Phe Thr Arg
 85 90 95
 Glu Gln Leu Ala Glu Ser Ile Leu His Glu Gly Ser Thr Gly Cys Arg
 100 105 110
 Val Val Glu Lys Phe Leu Lys Ile Leu Gln Val Val Val Gln Glu Pro
 115 120 125
 Gly Gln Val Phe Lys Pro Phe Leu Pro Ser Ile Ile Ala Leu Cys Met
 130 135 140
 Glu Gln Val Tyr Pro Ile Ile Ala Glu Arg Pro Ser Pro Asp Val Lys
 145 150 155 160
 Ala Glu Leu Phe Glu Leu Leu Phe Arg Thr Leu His His Asn Trp Arg
 165 170 175
 Tyr Phe Phe Lys Ser Thr Val Leu Ala Ser Val Gln Arg Gly Ile Ala
 180 185 190
 Glu Glu Gln Met Glu Asn Glu Pro Gln Phe Ser Ala Ile Met Gln Ala
 195 200 205
 Phe Gly Gln Ser Phe Leu Gln Pro Asp Ile His Leu Phe Lys Gln Asn
 210 215 220
 Leu Phe Tyr Leu Glu Thr Leu Asn Thr Lys Gln Lys Leu Tyr His Lys
 225 230 235 240
 Lys Ile Phe Arg Thr Ala Met Leu Phe Gln Phe Val Asn Val Leu Leu
 245 250 255
 Gln Val Leu Val His Lys Ser His Asp Leu Leu Gln Glu Glu Ile Gly
 260 265 270

Ile Ala Ile Tyr Asn Met Ala Ser Val Asp Phe Asp Gly Phe Phe Ala
 275 280 285

Ala Phe Leu Pro Glu Phe Leu Thr Ser Cys Asp Gly Val Asp Ala Asn
 290 295 300

Gln Lys Ser Val Leu Gly Arg Asn Phe Lys Met Asp Arg Asp Leu Pro
 305 310 315 320

Ser Phe Thr Gln Asn Val His Arg Leu Val Asn Asp Leu Arg Tyr Tyr
 325 330 335

Arg Leu Cys Asn Asp Ser Leu Pro Pro Gly Thr Val Lys Leu
 340 345 350

<210> 55
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 55
 antgtcttga ctacaagctc cacgggggc 29

<210> 56
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 56
 tngccaagga gaaagcgagg cagacaagg 29

<210> 57
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 57
anatcgactc tttgcatcgc acattttgt 29

<210> 58
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 58
cnttcttcgg acttatgttt gaatctatc 29

<210> 59
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 59
cnttcctctt agatctcagt atccacctc 29

<210> 60
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 60
cncagacagg ggagataaca atgaggtgc 29

<210> 61
<211> 29
<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 61
 tntctataggt gacttcaccc tgtcaggag 29

<210> 62
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 62
 tnttacagga gcaggacgcg agcagagag 29

<210> 63
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 63
 antcagttgt ggaggaggaa actgaggca 29

<210> 64
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 64
 cntcgaaaca gagtgaggaa gaagctcag 29

<210> 65
 <211> 262
 <212> PRT
 <213> Homo sapiens

<400> 65

Met Val Ala Trp Arg Ser Ala Phe Leu Val Cys Leu Ala Phe Ser Leu
 1 5 10 15

Ala Thr Leu Val Gln Arg Gly Ser Gly Asp Phe Asp Asp Phe Asn Leu
 20 25 30

Glu Asp Ala Val Lys Glu Thr Ser Ser Val Lys Gln Pro Trp Asp His
 35 40 45

Thr Thr Thr Thr Thr Thr Asn Arg Pro Gly Thr Thr Arg Ala Pro Ala
 50 55 60

Lys Pro Pro Gly Ser Gly Leu Asp Leu Ala Asp Ala Leu Asp Asp Gln
 65 70 75 80

Asp Asp Gly Arg Arg Lys Pro Gly Ile Gly Gly Arg Glu Arg Trp Asn
 85 90 95

His Val Thr Thr Thr Thr Lys Arg Pro Val Thr Thr Arg Ala Pro Ala
 100 105 110

Asn Thr Leu Gly Asn Asp Phe Asp Leu Ala Asp Ala Leu Asp Asp Arg
 115 120 125

Asn Asp Arg Asp Asp Gly Arg Arg Lys Pro Ile Ala Gly Gly Gly Gly
 130 135 140

Phe Ser Asp Lys Asp Leu Glu Asp Ile Val Gly Gly Gly Glu Tyr Lys
 145 150 155 160

Pro Asp Lys Gly Lys Gly Asp Gly Arg Tyr Gly Ser Asn Asp Asp Pro
 165 170 175

Gly Ser Gly Met Val Ala Glu Pro Gly Thr Ile Ala Gly Val Ala Ser
 180 185 190

Ala Leu Ala Met Ala Leu Ile Gly Ala Val Ser Ser Tyr Ile Ser Tyr
 195 200 205

Gln Gln Lys Lys Phe Cys Phe Ser Ile Gln Gln Gly Leu Asn Ala Asp
 210 215 220

Tyr Val Lys Gly Glu Asn Leu Glu Ala Val Val Cys Glu Glu Pro Gln
 225 230 235 240

Val Lys Tyr Ser Thr Leu His Thr Gln Ser Ala Glu Pro Pro Pro Pro
 245 250 255

Pro Glu Pro Ala Arg Ile
260

<210> 66
<211> 482
<212> PRT
<213> Homo sapiens

<400> 66

Met His Val Leu Glu Thr Leu Asp Leu Leu Val Leu Arg Ala Asp Lys
1 5 10 15

Gly Lys Asp Ala Arg Leu Phe Val Phe Arg Leu Ser Ala Leu Gln Lys
20 25 30

Gly Leu Glu Gly Lys Gln Ala Gly Lys Ser Arg Ser Asp Cys Arg Glu
35 40 45

Asn Lys Leu Glu Lys Thr Lys Gly Cys His Leu Tyr Ala Ile Asn Thr
50 55 60

His His Ser Arg Glu Leu Arg Ile Val Val Ala Ile Arg Asn Lys Leu
65 70 75 80

Leu Leu Ile Thr Arg Lys His Asn Lys Pro Ser Gly Val Thr Ser Thr
85 90 95

Ser Leu Leu Ser Pro Leu Ser Glu Ser Pro Val Glu Glu Phe Gln Tyr
100 105 110

Ile Arg Glu Ile Cys Leu Ser Asp Ser Pro Met Val Met Thr Leu Val
115 120 125

Asp Gly Pro Ala Glu Glu Ser Asp Asn Leu Ile Cys Val Ala Tyr Arg
130 135 140

His Gln Phe Asp Val Val Asn Glu Ser Thr Gly Glu Ala Phe Arg Leu
145 150 155 160

His His Val Glu Ala Asn Arg Val Asn Phe Val Ala Ala Ile Asp Val
165 170 175

Tyr Glu Asp Gly Glu Ala Gly Leu Leu Leu Cys Tyr Asn Tyr Ser Cys
180 185 190

Ile Tyr Lys Lys Val Cys Pro Phe Asn Gly Gly Ser Phe Leu Val Gln

| 195 | 200 | 205 |
|--|-----|-----|
| Pro Ser Ala Ser Asp Phe Gln Phe Cys Trp Asn Gln Ala Pro Tyr Ala 210 215 220 | | |
| Ile Val Cys Ala Phe Pro Tyr Leu Leu Ala Phe Thr Thr Asp Ser Met 225 230 235 240 | | |
| Glu Ile Arg Leu Val Val Asn Gly Asn Leu Val His Thr Ala Val Val 245 250 255 | | |
| Pro Gln Leu Gln Leu Val Ala Ser Arg Ser Asp Ile Tyr Phe Thr Ala 260 265 270 | | |
| Thr Ala Ala Val Asn Glu Val Ser Ser Gly Gly Ser Ser Lys Gly Ala 275 280 285 | | |
| Ser Ala Arg Asn Ser Pro Gln Thr Pro Pro Gly Arg Asp Thr Pro Val 290 295 300 | | |
| Phe Pro Ser Ser Leu Gly Glu Gly Glu Ile Gln Ser Lys Asn Leu Tyr 305 310 315 320 | | |
| Lys Ile Pro Leu Arg Asn Leu Val Gly Arg Ser Ile Glu Arg Pro Leu 325 330 335 | | |
| Lys Ser Pro Leu Val Ser Lys Val Ile Thr Pro Pro Thr Pro Ile Ser 340 345 350 | | |
| Val Gly Leu Ala Ala Ile Pro Val Thr His Ser Leu Ser Leu Ser Arg 355 360 365 | | |
| Met Glu Ile Lys Glu Ile Ala Ser Arg Thr Arg Arg Glu Leu Leu Gly 370 375 380 | | |
| Leu Ser Asp Glu Gly Gly Pro Lys Ser Glu Gly Ala Pro Lys Ala Lys 385 390 395 400 | | |
| Ser Lys Pro Arg Lys Arg Leu Glu Glu Ser Gln Gly Gly Pro Lys Pro 405 410 415 | | |
| Gly Ala Val Arg Ser Ser Ser Ser Asp Arg Ile Pro Ser Gly Ser Leu 420 425 430 | | |
| Glu Ser Ala Ser Thr Ser Glu Ala Asn Pro Glu Gly His Ser Ala Ser | | |

435

440

445

Ser Asp Gln Asp Pro Val Ala Asp Arg Glu Gly Ser Pro Val Ser Gly
 450 455 460

Ser Ser Pro Phe Gln Leu Thr Ala Phe Ser Asp Glu Asp Ile Ile Asp
 465 470 475 480

Leu Lys

<210> 67
 <211> 1748
 <212> DNA
 <213> Homo sapiens

<400> 67
 gtttagtgat acgacacaag atcgggagat ttttgatcac cataactgaag aggatataga 60
 taaaagtgct aacagtgtat tgataaaaaa cctgagcagg accccatcta gttgcagcag 120
 ctctctggat tcaatcaagg ctgatgggac ctctctggac ttcagcactt accgcagtag 180
 tcaaattggaa tcacagtttc tcagagatac tatttgtgaa gagagcttga gggagaaaact 240
 ccaagatggg agaataacaa taaggaggtt ctttatactt ctccagggtcc acatcttgat 300
 acagaaaccc cgacagagca atctcccagg caattttact gtaaacacac cacctactcc 360
 agaagacctg atgttaagtc aatatgttta ccgacccaag atacagattt atagagaaga 420
 ttgtgaggct cgtcgccaaa agattgaaga attaaagctt tctgcatcga accaagataa 480
 gctgttggtt gatataaata agaacctgtg ggaaaaaatg agacactgct ctgacaaaga 540
 gctgaaggcc tttggaattt atcttaacaa aataaagtca tgtttttacca agatgactaa 600
 agtcttcact caccaaggaa aagtggctct gtatggcaag ctggtgcagt cagctcagaa 660
 tgagagggag aaacttcaaa taaagataga tgagatggat aaaatactta agaagatcga 720
 taactgcctc actgagatgg aaacagaaac taagaatttg gaggatgaag agaaaaacaa 780
 tcctgtggaa gaatgggatt ctgaaatgag agctgcagaa aaagaattgg aacagctgaa 840
 aactgaagag gaggagcttc aaagaaatct cttagaactg gaggtaccaa aagagcagac 900
 ccttgctcaa atagacttta tgcaaaaaca aagaaataga actgaagagc tactggatca 960
 gttgagcttg tctgagtggg atgtcgttga gtggagtgat gatcaagctg tattcacctt 1020
 tgtttatgac acgatacaac tcaccatcac ctttgaagag tcagttgttg gtttcctttt 1080
 cctggacaag cgttatagga agattgttga tgtcaatttt caatctctgt tagatgagga 1140
 tcaagctcct ccttcctccc ttttagttca taagcttatt ttccagtacg ttgaagaaaa 1200

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ggaatcctgg aagaagacat gtacaacca gcatcagtta cccaagatgc ttgaagaatt 1260
ctcactggta gtgcaccatt gcagactcct tggagaggag attgagtatt taaagagatg 1320
gggaccaaata tataacctaa tgaacataga tattaataat aatgaattga gactttttatt 1380
ctctagctcc gcagcatttg caaagtttga aataactttg tttctctcag cctattatcc 1440
atctgtacca ttaccttcca ccattcagaa tcacgttggg aacactagcc aagatgatat 1500
tgctaccatt ctatctaaag tgccactgga gaacaactac ctgaagaatg tagtcaagca 1560
aatttaccaa gatctgtttc aggactgcca tttctaccac tagacccttg gaccaccatt 1620
ggaacaacca agcagaatgt acttgatatt atttcagggc cccattgctg ttcagccttt 1680
gtttttacgt cattacaagc tgagtaaaat tccttctgat gatgttataa aaaaaaaaaa 1740
aaaaaaaaa 1748

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<210> 68
<211> 472
<212> PRT
<213> Homo sapiens

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<400> 68

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Met Glu Ser Gln Phe Leu Arg Asp Thr Ile Cys Glu Glu Ser Leu Arg
1           5           10          15

```

```

Glu Lys Leu Gln Asp Gly Arg Ile Thr Ile Arg Glu Phe Phe Ile Leu
          20          25          30

```

```

Leu Gln Val His Ile Leu Ile Gln Lys Pro Arg Gln Ser Asn Leu Pro
          35          40          45

```

```

Gly Asn Phe Thr Val Asn Thr Pro Pro Thr Pro Glu Asp Leu Met Leu
          50          55          60

```

```

Ser Gln Tyr Val Tyr Arg Pro Lys Ile Gln Ile Tyr Arg Glu Asp Cys
65           70           75          80

```

```

Glu Ala Arg Arg Gln Lys Ile Glu Glu Leu Lys Leu Ser Ala Ser Asn
          85          90          95

```

```

Gln Asp Lys Leu Leu Val Asp Ile Asn Lys Asn Leu Trp Glu Lys Met
          100          105          110

```

```

Arg His Cys Ser Asp Lys Glu Leu Lys Ala Phe Gly Ile Tyr Leu Asn
          115          120          125

```

Lys Ile Lys Ser Cys Phe Thr Lys Met Thr Lys Val Phe Thr His Gln
 130 135 140

Gly Lys Val Ala Leu Tyr Gly Lys Leu Val Gln Ser Ala Gln Asn Glu
 145 150 155 160

Arg Glu Lys Leu Gln Ile Lys Ile Asp Glu Met Asp Lys Ile Leu Lys
 165 170 175

Lys Ile Asp Asn Cys Leu Thr Glu Met Glu Thr Glu Thr Lys Asn Leu
 180 185 190

Glu Asp Glu Glu Lys Asn Asn Pro Val Glu Glu Trp Asp Ser Glu Met
 195 200 205

Arg Ala Ala Glu Lys Glu Leu Glu Gln Leu Lys Thr Glu Glu Glu Glu
 210 215 220

Leu Gln Arg Asn Leu Leu Glu Leu Glu Val Pro Lys Glu Gln Thr Leu
 225 230 235 240

Ala Gln Ile Asp Phe Met Gln Lys Gln Arg Asn Arg Thr Glu Glu Leu
 245 250 255

Leu Asp Gln Leu Ser Leu Ser Glu Trp Asp Val Val Glu Trp Ser Asp
 260 265 270

Asp Gln Ala Val Phe Thr Phe Val Tyr Asp Thr Ile Gln Leu Thr Ile
 275 280 285

Thr Phe Glu Glu Ser Val Val Gly Phe Pro Phe Leu Asp Lys Arg Tyr
 290 295 300

Arg Lys Ile Val Asp Val Asn Phe Gln Ser Leu Leu Asp Glu Asp Gln
 305 310 315 320

Ala Pro Pro Ser Ser Leu Leu Val His Lys Leu Ile Phe Gln Tyr Val
 325 330 335

Glu Glu Lys Glu Ser Trp Lys Lys Thr Cys Thr Thr Gln His Gln Leu
 340 345 350

Pro Lys Met Leu Glu Glu Phe Ser Leu Val Val His His Cys Arg Leu
 355 360 365

Leu Gly Glu Glu Ile Glu Tyr Leu Lys Arg Trp Gly Pro Asn Tyr Asn
 370 375 380

Leu Met Asn Ile Asp Ile Asn Asn Asn Glu Leu Arg Leu Leu Phe Ser
 385 390 395 400

Ser Ser Ala Ala Phe Ala Lys Phe Glu Ile Thr Leu Phe Leu Ser Ala
 405 410 415

Tyr Tyr Pro Ser Val Pro Leu Pro Ser Thr Ile Gln Asn His Val Gly
 420 425 430

Asn Thr Ser Gln Asp Asp Ile Ala Thr Ile Leu Ser Lys Val Pro Leu
 435 440 445

Glu Asn Asn Tyr Leu Lys Asn Val Val Lys Gln Ile Tyr Gln Asp Leu
 450 455 460

Phe Gln Asp Cys His Phe Tyr His
 465 470

<210> 69
 <211> 2298
 <212> DNA
 <213> Homo sapiens

<400> 69
 ctttttctttg attgtctctg ctttagcgtc tctaaatccg gtcaccatgt cggaccccga 60
 aggcgagacc ttgcgaagca cctttccctc ttatatggcc gaaggcgagc ggctctacct 120
 gtgcggggaa ttttctaaag ccgcgcagag cttcagcaac gctctttacc ttcaggatgg 180
 agacaagaac tgcttggttg ctgcgtcaaa gtgcttcctg aagatgggag acttgagag 240
 atccctgaag gatgctgarg cttcgctcca gagtgaccca gctttctgta aggggatttt 300
 gcaaaaggct gagacactgt acaccatggg agactttgag tttgccttgg tattctatca 360
 tcgargctac aagctgargc ctgatcggga attcarartt ggcatcaga aagcccagga 420
 agccatcaac aactcagtgg gaagtccttc ttccattaag ctggagaaca aaggggacct 480
 ctccttctta agcaagcagg ctgagaatat aaaagcccag cagaagcctc agcccatgaa 540
 acacctctta caccacacca agggagagcc caagtggaag gcctcgctca agagtgagaa 600
 gactgtccgc cagcttctgg gggagctcta cgtggacaaa gagtatttgg agaagctcct 660
 attggatgaa gacctgatca aaggcaccat gaagggcggc ctgactgtgg aggacctcat 720
 catgacgggc atcaactacc tggatactca cagcaacttc tggaggcagc agaagccgat 780

| | |
|--|------|
| ctacgccagg gagcgggacc ggaagctgat gcaagagaaa tggctgcggg accacaaacg | 840 |
| ccgtccctca cagacagccc attacatcct caagagcctg gaggacattg atatgttgct | 900 |
| cacaagtggc agtgctgaag ggagtcttca gaaagctgag aaagtgctga agaagggtact | 960 |
| ggaatggaac aaggaagagg taccacaaca ggatgaactg gttggaaact tgtatagctg | 1020 |
| catagggaaat gcccagattg agctggggca gatggaggca gccctgcaga gccacagaaa | 1080 |
| ggacytgag atcgccaagg aatatgacct tcctgatgca aaatcgagag cccttgacaa | 1140 |
| cattggcaga gtttttgcca gagttgggaa attccagcaa gccattgaca cgtgggaaga | 1200 |
| aaagatccct ctggcaaaaa ccaccctgga gaagacctgg ctgttccacg agatcggccg | 1260 |
| ctgctacttg gagctggacc aggctggca ggcccagaat tatggcgaga agtcccagca | 1320 |
| gtgtgccgag gaggaagggg acattgagtg gcaactgaat gccagtgttc tgggtggcca | 1380 |
| ggcacaagtg aagctgagag acttcgagtc agccgtgaac aattttgaga aggccctgga | 1440 |
| gagagcaaag cttgtgcata acaacgaggc gcagcaggcc atcatcagtg ccttggaaga | 1500 |
| tgccaacaag ggtatcatca gagaactgag gaaaaccaac tacgtggaga atctcaaaga | 1560 |
| aaaaagcgag ggagaagctt cactgtatga agatagaata ataacaagag agaaggacat | 1620 |
| gaggagagtg agagatgagc ccgagaaggt ggtgaagcag tgggaccata gtgaggatga | 1680 |
| gaaagagaca gatgaggacg atgaggcttt tggggaagct ctgcagagcc cagcaagcgg | 1740 |
| aaagcagagt gtggaagcag gaaaagccag aagcgatttg ggagcagttg ccaagggcct | 1800 |
| gtcaggagaa ttaggcacaa gatcaggaga aacaggcagg aagctactag aagctggcag | 1860 |
| aagagagtca agagaaatth ataggaggcc ttcgggagaa ttagagcaaa gactctcagg | 1920 |
| agaattcagc agacaggaac cagaagaact aaagaaactt tcagaagtgg gcagaagaga | 1980 |
| sccagaagaa ytgggaaaaa cacaatttgg agaaatagga gaaacgaaaa aaacaggaaa | 2040 |
| tgagatggaa aaggaatatg aatgaagcca tcggtagaga tgaggatcag gaagctggtg | 2100 |
| ttcagagggg tcatgggatt ttattaaact ggattttcaa gcgatttgtc tgttatagga | 2160 |
| aaaatgaggg ttttacttyt gctgctttcc atcactatth tgccattaaa taggtgtctt | 2220 |
| tcactcttgc maaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa | 2280 |
| aaaaaaaaaa aaaaaaaa | 2298 |

<210> 70
 <211> 672
 <212> PRT
 <213> Homo sapiens

<220>

<221> misc_feature
 <222> (107)..(107)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (111)..(111)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (117)..(118)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (645)..(645)
 <223> Xaa can be any naturally occurring amino acid

<400> 70

Met Ser Asp Pro Glu Gly Glu Thr Leu Arg Ser Thr Phe Pro Ser Tyr
 1 5 10 15

Met Ala Glu Gly Glu Arg Leu Tyr Leu Cys Gly Glu Phe Ser Lys Ala
 20 25 30

Ala Gln Ser Phe Ser Asn Ala Leu Tyr Leu Gln Asp Gly Asp Lys Asn
 35 40 45

Cys Leu Val Ala Arg Ser Lys Cys Phe Leu Lys Met Gly Asp Leu Glu
 50 55 60

Arg Ser Leu Lys Asp Ala Glu Ala Ser Leu Gln Ser Asp Pro Ala Phe
 65 70 75 80

Cys Lys Gly Ile Leu Gln Lys Ala Glu Thr Leu Tyr Thr Met Gly Asp
 85 90 95

Phe Glu Phe Ala Leu Val Phe Tyr His Arg Xaa Tyr Lys Leu Xaa Pro
 100 105 110

Asp Arg Glu Phe Xaa Xaa Gly Ile Gln Lys Ala Gln Glu Ala Ile Asn
 115 120 125

Asn Ser Val Gly Ser Pro Ser Ser Ile Lys Leu Glu Asn Lys Gly Asp
 130 135 140

Leu Ser Phe Leu Ser Lys Gln Ala Glu Asn Ile Lys Ala Gln Gln Lys
 145 150 155 160

Pro Gln Pro Met Lys His Leu Leu His Pro Thr Lys Gly Glu Pro Lys
 165 170 175
 Trp Lys Ala Ser Leu Lys Ser Glu Lys Thr Val Arg Gln Leu Leu Gly
 180 185 190
 Glu Leu Tyr Val Asp Lys Glu Tyr Leu Glu Lys Leu Leu Leu Asp Glu
 195 200 205
 Asp Leu Ile Lys Gly Thr Met Lys Gly Gly Leu Thr Val Glu Asp Leu
 210 215 220
 Ile Met Thr Gly Ile Asn Tyr Leu Asp Thr His Ser Asn Phe Trp Arg
 225 230 235 240
 Gln Gln Lys Pro Ile Tyr Ala Arg Glu Arg Asp Arg Lys Leu Met Gln
 245 250 255
 Glu Lys Trp Leu Arg Asp His Lys Arg Arg Pro Ser Gln Thr Ala His
 260 265 270
 Tyr Ile Leu Lys Ser Leu Glu Asp Ile Asp Met Leu Leu Thr Ser Gly
 275 280 285
 Ser Ala Glu Gly Ser Leu Gln Lys Ala Glu Lys Val Leu Lys Lys Val
 290 295 300
 Leu Glu Trp Asn Lys Glu Glu Val Pro Asn Lys Asp Glu Leu Val Gly
 305 310 315 320
 Asn Leu Tyr Ser Cys Ile Gly Asn Ala Gln Ile Glu Leu Gly Gln Met
 325 330 335
 Glu Ala Ala Leu Gln Ser His Arg Lys Asp Leu Glu Ile Ala Lys Glu
 340 345 350
 Tyr Asp Leu Pro Asp Ala Lys Ser Arg Ala Leu Asp Asn Ile Gly Arg
 355 360 365
 Val Phe Ala Arg Val Gly Lys Phe Gln Gln Ala Ile Asp Thr Trp Glu
 370 375 380
 Glu Lys Ile Pro Leu Ala Lys Thr Thr Leu Glu Lys Thr Trp Leu Phe
 385 390 395 400

His Glu Ile Gly Arg Cys Tyr Leu Glu Leu Asp Gln Ala Trp Gln Ala
 405 410 415

Gln Asn Tyr Gly Glu Lys Ser Gln Gln Cys Ala Glu Glu Glu Gly Asp
 420 425 430

Ile Glu Trp Gln Leu Asn Ala Ser Val Leu Val Ala Gln Ala Gln Val
 435 440 445

Lys Leu Arg Asp Phe Glu Ser Ala Val Asn Asn Phe Glu Lys Ala Leu
 450 455 460

Glu Arg Ala Lys Leu Val His Asn Asn Glu Ala Gln Gln Ala Ile Ile
 465 470 475 480

Ser Ala Leu Asp Asp Ala Asn Lys Gly Ile Ile Arg Glu Leu Arg Lys
 485 490 495

Thr Asn Tyr Val Glu Asn Leu Lys Glu Lys Ser Glu Gly Glu Ala Ser
 500 505 510

Leu Tyr Glu Asp Arg Ile Ile Thr Arg Glu Lys Asp Met Arg Arg Val
 515 520 525

Arg Asp Glu Pro Glu Lys Val Val Lys Gln Trp Asp His Ser Glu Asp
 530 535 540

Glu Lys Glu Thr Asp Glu Asp Asp Glu Ala Phe Gly Glu Ala Leu Gln
 545 550 555 560

Ser Pro Ala Ser Gly Lys Gln Ser Val Glu Ala Gly Lys Ala Arg Ser
 565 570 575

Asp Leu Gly Ala Val Ala Lys Gly Leu Ser Gly Glu Leu Gly Thr Arg
 580 585 590

Ser Gly Glu Thr Gly Arg Lys Leu Leu Glu Ala Gly Arg Arg Glu Ser
 595 600 605

Arg Glu Ile Tyr Arg Arg Pro Ser Gly Glu Leu Glu Gln Arg Leu Ser
 610 615 620

Gly Glu Phe Ser Arg Gln Glu Pro Glu Glu Leu Lys Lys Leu Ser Glu
 625 630 635 640

Val Gly Arg Arg Xaa Pro Glu Glu Leu Gly Lys Thr Gln Phe Gly Glu
645 650 655

Ile Gly Glu Thr Lys Lys Thr Gly Asn Glu Met Glu Lys Glu Tyr Glu
660 665 670

<210> 71
<211> 1010
<212> DNA
<213> Homo sapiens

<400> 71
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gttgggggca tggctctgcag gctcatctgt gtccgccttt cactccacta atgctgtctc 180
agtgttttct ctctctctct ttcgagcttg cactccggta cccgaccggg cgccctggcc 240
catcccatgc cgggggggcca gtggaaagaa gacaggccgt ccagcccgtg cccgcctgcg 300
gcggggggcac ccagcaagcc cgcccaccgc ccgctgcctc acctgcttcg ccacagactc 360
ttgttcccag ccccttgggg cctccgtgtt tgggggtgggg gagctgctta gagactgtgc 420
ccgtcctcgg cccccaccc tgaagtcca gcaccaccag caccagatct tccgccgcca 480
caccgcattg aggacacgcc ggccggggccg cttegtctca agttgtataa agttgtctcc 540
gtgtccctc ctccctctgc cccagtggtt tcttctgatt tttttttccc ctttccctcc 600
ctccctctcc gcattcttcc cttgggttcag cacaggtaaa acggttcccc tccctccctg 660
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gccatgtaac tggaggatgt gctatgagtt tgcaaacagc tggactgtca ggctgctttt 840
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ccttcctttc cttggagcac tgagcaccat ttggaagctt gagagaaacc aaaattaaag 960
agagaaagag agagcgtgca cgctcctgct ttgtcaaaaa aaaaaaaaaa 1010

<210> 72
<211> 205
<212> PRT
<213> Homo sapiens

<400> 72

Met Gly Ser Gly Gly Leu Gly Ala Trp Ser Ala Gly Ser Ser Val Ser
1 5 10 15

Ala Phe His Ser Thr Asn Ala Val Ser Val Phe Ser Leu Ser Leu Phe
20 25 30

Arg Ala Cys Thr Pro Val Pro Asp Pro Ala Pro Trp Pro Ile Pro Cys
35 40 45

Arg Gly Ala Ser Gly Lys Lys Thr Gly Arg Pro Ala Arg Ala Arg Leu
50 55 60

Arg Arg Gly His Pro Ala Ser Pro Pro Thr Ala Arg Cys Leu Thr Cys
65 70 75 80

Phe Ala Thr Asp Ser Cys Ser Gln Pro Leu Gly Ala Ser Val Phe Gly
85 90 95

Val Gly Glu Leu Leu Arg Asp Cys Ala Arg Pro Arg Pro Pro Thr Leu
100 105 110

Lys Cys Gln His His Gln His Gln Ile Phe Arg Arg His Thr Ala Leu
115 120 125

Arg Thr Arg Arg Pro Gly Arg Phe Val Ser Ser Cys Ile Lys Leu Ser
130 135 140

Pro Cys Pro Leu Leu Pro Leu Pro Pro Val Phe Leu Leu Ile Phe Phe
145 150 155 160

Ser Pro Phe Pro Pro Ser Leu Ser Ala Phe Phe Pro Trp Phe Ser Thr
165 170 175

Gly Lys Thr Val Pro Leu Pro Pro Cys Leu His Gly Ser Pro Ala His
180 185 190

Val Met Leu Pro Ser Leu Phe Phe Val Cys Val Phe Ile
195 200 205

<210> 73

<211> 2409

<212> DNA

<213> Homo sapiens

<400> 73

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ggagcagtc agcttatggg cctgcttcga actttagttg acccagagaa catgctagcc 120

actgccmata aaacasaaaa gactgaattt ctgggtttct tctacaagca ctgtatgcat 180

| | |
|--|------|
| gttctcwctg ctcctttact agcaaataca acagaagaca aacctagtaa agatgatttt | 240 |
| cagactgccc aactattggc acttgatttg gaattgttaa cattttgtgt ggagcaccat | 300 |
| acctaccaca taaagaacta cattattaat aaggatatcc tccggagagt gctagttctt | 360 |
| atggcctcga agcatgcttt cttggcatta tgtgcccttc gttttaaaag aaagattatt | 420 |
| ggattaaaaag atgagtttta caaccgctac ataatgaaaa gttttttgtt tgaaccagta | 480 |
| gtgaaagcat ttctcaacaa tggatcccg c tacaatctga tgaactctgc cataatagag | 540 |
| atgtttgaat ttattagagt ggaagatata aaatcattaa ctgctcatgt aattgaaaat | 600 |
| tactggaaaag cactggaaga tgtagattat gtacagacat ttaaaggatt aaaactgaga | 660 |
| tttgaacaac aaagagaaa gcaagataat cccaaacttg acagtatgcg ttccattttg | 720 |
| aggaatcaca gatatcgaag agatgccaga aactagaag atgaagaaga gatgtggttt | 780 |
| aacacagatg aagatgacat ggaagatgga gaagctgtag tgtctccatc tgacaaaact | 840 |
| aaaaatgatg atgatattat ggatccaata agtaaattca tggaaaggaa gaaattaaaa | 900 |
| gaaagtgagg aaaaggaagt gcttctgaaa acaaacttt ctggacggca gagcccaagt | 960 |
| ttcaagcttt ccctgtccag tggaaacgaag actaacctca ccagccagtc atctacaaca | 1020 |
| aatctgcctg gttctccggg atcacctgga tccccaggat ctccaggctc tcctggatcc | 1080 |
| gtacctaaaa atacatctca gacggcagct attactacaa agggaggcct cgtgggtctg | 1140 |
| gtagattatc ctgatgatga tgaagatgat gatgaggatg aagataagga agatacgta | 1200 |
| ccattgtcaa agaaagcaaa atttgattca taataatggc aacggcctag gatcagtacc | 1260 |
| tgttgaaaaa aactggttct ccaccctcc cccatacaaa atccacaaaa aagcgcagtg | 1320 |
| gtctcttgtg aatgactgac acagatcagc ctcttact tgacttctgc tcatcaagtg | 1380 |
| ccaattcaat ggagcaggag gaggggatat catatattta ggggaaagac ttaagccttt | 1440 |
| gagctctcca gcttgacca cacattgccc ttttctcagg gaaggaaatg gaaacaaaaa | 1500 |
| gccaacaggg caggggtttt gtaagtggaa ctctggattg actggtcagt tgctacaatc | 1560 |
| agaatatgct ttcttgacc atgtttgaga ctcagaagaa tggcctttct gccataatc | 1620 |
| ttcactagtc aagaatgcca gcagtttctt tgtataaaga gacctgcctt taaaatcata | 1680 |
| cattctgaac attttagtca agctacaaca ggtttggaag acctctgtgg gggagggcg | 1740 |
| agtataaagt tttctctttt ttttaactgtt ccctttgccc ttcaaactgc agatattttt | 1800 |
| ttttttaagt ggggacttct ccctacttga ttaaagattg agtggaattc tagatgtggt | 1860 |
| catttgtgtc ataatttttt tgttttattt tgtttttgat ttttttttct cccccctgag | 1920 |
| tgtatgctta gttgttgagt atatatattt gggaccatta aaactttttt tgatgtaata | 1980 |

```

taacctaacg ttgtgctggt acctgtttta ccatgtgtaa tttttgttct acatcacagt 2040
tcttaatttg tttagagttt tatgaaagat ggtatagttt ttattgacaa aagcaaagta 2100
atcttacaac tatgtgcata caaaagcaat actattttgt gactaaatat tttatattaa 2160
aattttacatc agcaactgtc ttgagaattc agggaaatag aatggaattt aaaacttcaa 2220
cagttttgtt aaatctagaa acatgaaatt rgtattccaa agagattctg aaattttcttt 2280
tctkggggaa atgacggtac attaaatcaa aattgrggat ggatgattta aaaacatttg 2340
actttttaat aataaaaaga aaagtgaaga gtaagagaaa ttgtaaaaaa aaaaaaaaaa 2400
aaaaaaaaa 2409

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<210> 74
<211> 400
<212> PRT
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (33)..(33)
<223> Xaa can be any naturally occurring amino acid

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<220>
<221> misc_feature
<222> (36)..(36)
<223> Xaa can be any naturally occurring amino acid

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<220>
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<222> (53)..(53)
<223> Xaa can be any naturally occurring amino acid

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<400> 74

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Met Ile Cys Asp Thr Asp Pro Glu Leu Gly Gly Ala Val Gln Leu Met
1           5           10           15

```

```

Gly Leu Leu Arg Thr Leu Val Asp Pro Glu Asn Met Leu Ala Thr Ala
          20           25           30

```

```

Xaa Lys Thr Xaa Lys Thr Glu Phe Leu Gly Phe Phe Tyr Lys His Cys
          35           40           45

```

```

Met His Val Leu Xaa Ala Pro Leu Leu Ala Asn Thr Thr Glu Asp Lys
          50           55           60

```

```

Pro Ser Lys Asp Asp Phe Gln Thr Ala Gln Leu Leu Ala Leu Val Leu
65           70           75           80

```

Glu Leu Leu Thr Phe Cys Val Glu His His Thr Tyr His Ile Lys Asn
 85 90 95

Tyr Ile Ile Asn Lys Asp Ile Leu Arg Arg Val Leu Val Leu Met Ala
 100 105 110

Ser Lys His Ala Phe Leu Ala Leu Cys Ala Leu Arg Phe Lys Arg Lys
 115 120 125

Ile Ile Gly Leu Lys Asp Glu Phe Tyr Asn Arg Tyr Ile Met Lys Ser
 130 135 140

Phe Leu Phe Glu Pro Val Val Lys Ala Phe Leu Asn Asn Gly Ser Arg
 145 150 155 160

Tyr Asn Leu Met Asn Ser Ala Ile Ile Glu Met Phe Glu Phe Ile Arg
 165 170 175

Val Glu Asp Ile Lys Ser Leu Thr Ala His Val Ile Glu Asn Tyr Trp
 180 185 190

Lys Ala Leu Glu Asp Val Asp Tyr Val Gln Thr Phe Lys Gly Leu Lys
 195 200 205

Leu Arg Phe Glu Gln Gln Arg Glu Arg Gln Asp Asn Pro Lys Leu Asp
 210 215 220

Ser Met Arg Ser Ile Leu Arg Asn His Arg Tyr Arg Arg Asp Ala Arg
 225 230 235 240

Thr Leu Glu Asp Glu Glu Glu Met Trp Phe Asn Thr Asp Glu Asp Asp
 245 250 255

Met Glu Asp Gly Glu Ala Val Val Ser Pro Ser Asp Lys Thr Lys Asn
 260 265 270

Asp Asp Asp Ile Met Asp Pro Ile Ser Lys Phe Met Glu Arg Lys Lys
 275 280 285

Leu Lys Glu Ser Glu Glu Lys Glu Val Leu Leu Lys Thr Asn Leu Ser
 290 295 300

Gly Arg Gln Ser Pro Ser Phe Lys Leu Ser Leu Ser Ser Gly Thr Lys
 305 310 315 320

Thr Asn Leu Thr Ser Gln Ser Ser Thr Thr Asn Leu Pro Gly Ser Pro
 325 330 335

Gly Ser Pro Gly Ser Pro Gly Ser Pro Gly Ser Pro Gly Ser Val Pro
 340 345 350

Lys Asn Thr Ser Gln Thr Ala Ala Ile Thr Thr Lys Gly Gly Leu Val
 355 360 365

Gly Leu Val Asp Tyr Pro Asp Asp Asp Glu Asp Asp Asp Glu Asp Glu
 370 375 380

Asp Lys Glu Asp Thr Leu Pro Leu Ser Lys Lys Ala Lys Phe Asp Ser
 385 390 395 400

<210> 75

<211> 951

<212> DNA

<213> Homo sapiens

<400> 75

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catgccgtgg gatcatgggc agggaaggct ctgggggtcg gagacaccgc tgcttagcac      120
ccccagccag aacaccctga ggggtctcggg gctctggaga gaggggggcg ggaggaagaa      180
ttggcacctt cctaggggaag gagacgagcg cttcgccctg attctccgag aagcctccga      240
gaagtgcttt aagtgtgttt gcatgcscga ggcgggtgggc agcggggggcc tgtccarccc      300
tctcccgcga tccttcccc agtgacgtcc actgccttgt caccagcgac ctgcctgtca      360
tgcccacccc ctgaggaagc atggggaccc taacaccctg gtgccctgca ccagacaggc      420
cgtgggtcagg ccagggccac cggccggggt ctgccacarc ttcccacgtg cttgctgaca      480
tgcstgtgcc tgtgtgtggt gtctgttgt gtgtcgtgaa actgtgacca tcaactcagtc      540
caaacaagtg agtggcccts gagggcacag ttatgcaact ttcagtgtgt gtcataacga      600
cgtcactgct ttttaaactc gataactctt tatttttagta aaatgccag gagtcctgga      660
agctacgcgg acttgacag gttttatatt ttggccttag aatctgcaga aattaggagg      720
caccgagccc agcgcagcag cctcggaccc ggattgcgtt tgccttagcg gatattgtta      780
tacagatgaa tataaaatgt ttttttcttt gggctttttg cttctttttt ccccccttc      840
tcaccttccc ttctccctga cccaccccc caaaaaagct acttcttcat tccgtggtac      900
gattattttt tttaactaaa ggaagataaa attctaataa aaaaaaaaaa a          951
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<210> 76

<211> 87
 <212> PRT
 <213> Homo sapiens

<220>
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 <222> (69)..(69)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (79)..(79)
 <223> Xaa can be any naturally occurring amino acid

<400> 76

Met Pro Trp Asp His Gly Gln Gly Arg Leu Trp Gly Ser Glu Thr Pro
 1 5 10 15

Leu Leu Ser Thr Pro Ser Gln Asn Thr Leu Arg Val Ser Gly Leu Trp
 20 25 30

Arg Glu Trp Gly Gly Arg Lys Asn Trp His Leu Pro Arg Glu Gly Asp
 35 40 45

Glu Arg Phe Ala Leu Ile Leu Arg Glu Ala Ser Glu Lys Cys Phe Lys
 50 55 60

Cys Val Cys Met Xaa Gln Ala Val Gly Ser Gly Gly Leu Ser Xaa Pro
 65 70 75 80

Leu Pro Pro Ser Phe Pro Lys
 85

<210> 77
 <211> 1899
 <212> DNA
 <213> Homo sapiens

<400> 77
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 gattcgactc aggccctcac tccaggcagc cctctctctc ctaccgaata cgaacgcttc 180
 ttcgcactgc tgactccaac ctggaaggca gagactacct gccgtctccg tgcaaccac 240
 ggctgccgga atccacact cgtccagctg gaccaatatg aaaaccacgg cttagtgcc 300
 gatggtgctg tctgctccaa cctcccttat gcctctggt ttgagtcttt ctgccagttc 360
 actcactacc gttgctccaa ccacgtctac tatgccaaga gagtcctgtg ttcccagcca 420

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gtctctattc tctcacctaa cactctcaag gagatagaag cttcagctga agtctcaccc 480
accacgatga cctcccccat ctcacccac ttcacagtga cagaacgcca gaccttcag 540
ccctggcctg agaggctcag caacaacgtg gaagagctcc tacaatcctc cttgtccctg 600
ggaggccagg agcaagcgcc agagcacaag caggagcaag gagtggagca caggcaggag 660
ccgacacaag aacacaagca ggaagagggg cagaaacagg aagagcaaga agaggaacag 720
gaagaggagg gaaagcagga agaaggacag gggactaagg agggacggga ggctgtgtct 780
cagctgcaga cagactcaga gccaagttt cactctgaat ctctatcttc taacccttcc 840
tcttttgctc cccgggtacg agaagtagag tctactccta tgataatgga gaacatccag 900
gagctcattc gatcagccca ggaaatagat gaaatgaatg aaatatatga tgagaactcc 960
tactggagaa accaaaaccc tggcagcctc ctgcagctgc cccacacaga ggccttgctg 1020
gtgctgtgct attcgatcgt ggagaatacc tgcatacataa cccccacagc caaggcctgg 1080
aagtacatgg aggaggagat ccttggtttc gggaagtcgg tctgtgacag ccttgggcgg 1140
cgacacatgt ctacctgtgc cctctgtgac ttctgtcctt tgaagctgga gcagtgccac 1200
tcagaggcca gcctgcagcg gcaacaatgc gacacctccc acaagactcc ctttgtcagc 1260
cccttgcttg cctcccagag cctgtccatc ggcaaccagg tagggcctcc agaatcaggc 1320
cgcttttacg ggctggattt gtacggtggg ctccacatgg acttctggtg tgcccggtt 1380
gccacgaaag gctgtgaaga tgtccgagtc tctgggtggc tccagactga gttccttagc 1440
ttccaggatg gggatttccc taccaagatt tgtgacacag actatatcca gtacccaaac 1500
tactgttctt tcaaaagcca gcagtgtctg atgagaaacc gcaatcggaa ggtgtcccgc 1560
atgagatgtc tgcagaatga gacttacagt gcgctgagcc tggcaaaagt gaggacgttg 1620
tgctttcgat ggagccagga gttcagcacc ttgactctag gccagttcgg atgagctkgs 1680
gtttattttg cccacacccc agcccaacct gccasgttc tctattgttt tgagacccca 1740
ttgctttcag gctgcccctt ctgggtctgt tactcgcccc ctamtacat ttccttgggt 1800
tggagcaaca gtcccagaga gggccacggt gggagctgcg ccctccttaa aagatgactt 1860
tacataaaat gttgatcttc aaaaaaaaaa aaaaaaaaaa 1899

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<210> 78
<211> 543
<212> PRT
<213> Homo sapiens

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<400> 78
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Met Arg Lys Pro Ala Ala Gly Phe Leu Pro Ser Leu Leu Lys Val Leu
1           5           10           15

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Leu Leu Pro Leu Ala Pro Ala Ala Ala Gln Asp Ser Thr Gln Ala Ser
 20 25 30

Thr Pro Gly Ser Pro Leu Ser Pro Thr Glu Tyr Glu Arg Phe Phe Ala
 35 40 45

Leu Leu Thr Pro Thr Trp Lys Ala Glu Thr Thr Cys Arg Leu Arg Ala
 50 55 60

Thr His Gly Cys Arg Asn Pro Thr Leu Val Gln Leu Asp Gln Tyr Glu
 65 70 75 80

Asn His Gly Leu Val Pro Asp Gly Ala Val Cys Ser Asn Leu Pro Tyr
 85 90 95

Ala Ser Trp Phe Glu Ser Phe Cys Gln Phe Thr His Tyr Arg Cys Ser
 100 105 110

Asn His Val Tyr Tyr Ala Lys Arg Val Leu Cys Ser Gln Pro Val Ser
 115 120 125

Ile Leu Ser Pro Asn Thr Leu Lys Glu Ile Glu Ala Ser Ala Glu Val
 130 135 140

Ser Pro Thr Thr Met Thr Ser Pro Ile Ser Pro His Phe Thr Val Thr
 145 150 155 160

Glu Arg Gln Thr Phe Gln Pro Trp Pro Glu Arg Leu Ser Asn Asn Val
 165 170 175

Glu Glu Leu Leu Gln Ser Ser Leu Ser Leu Gly Gly Gln Glu Gln Ala
 180 185 190

Pro Glu His Lys Gln Glu Gln Gly Val Glu His Arg Gln Glu Pro Thr
 195 200 205

Gln Glu His Lys Gln Glu Glu Gly Gln Lys Gln Glu Glu Gln Glu Glu
 210 215 220

Glu Gln Glu Glu Glu Gly Lys Gln Glu Glu Gly Gln Gly Thr Lys Glu
 225 230 235 240

Gly Arg Glu Ala Val Ser Gln Leu Gln Thr Asp Ser Glu Pro Lys Phe
 245 250 255

His Ser Glu Ser Leu Ser Ser Asn Pro Ser Ser Phe Ala Pro Arg Val
 260 265 270

Arg Glu Val Glu Ser Thr Pro Met Ile Met Glu Asn Ile Gln Glu Leu
 275 280 285

Ile Arg Ser Ala Gln Glu Ile Asp Glu Met Asn Glu Ile Tyr Asp Glu
 290 295 300

Asn Ser Tyr Trp Arg Asn Gln Asn Pro Gly Ser Leu Leu Gln Leu Pro
 305 310 315 320

His Thr Glu Ala Leu Leu Val Leu Cys Tyr Ser Ile Val Glu Asn Thr
 325 330 335

Cys Ile Ile Thr Pro Thr Ala Lys Ala Trp Lys Tyr Met Glu Glu Glu
 340 345 350

Ile Leu Gly Phe Gly Lys Ser Val Cys Asp Ser Leu Gly Arg Arg His
 355 360 365

Met Ser Thr Cys Ala Leu Cys Asp Phe Cys Ser Leu Lys Leu Glu Gln
 370 375 380

Cys His Ser Glu Ala Ser Leu Gln Arg Gln Gln Cys Asp Thr Ser His
 385 390 395 400

Lys Thr Pro Phe Val Ser Pro Leu Leu Ala Ser Gln Ser Leu Ser Ile
 405 410 415

Gly Asn Gln Val Gly Ser Pro Glu Ser Gly Arg Phe Tyr Gly Leu Asp
 420 425 430

Leu Tyr Gly Gly Leu His Met Asp Phe Trp Cys Ala Arg Leu Ala Thr
 435 440 445

Lys Gly Cys Glu Asp Val Arg Val Ser Gly Trp Leu Gln Thr Glu Phe
 450 455 460

Leu Ser Phe Gln Asp Gly Asp Phe Pro Thr Lys Ile Cys Asp Thr Asp
 465 470 475 480

Tyr Ile Gln Tyr Pro Asn Tyr Cys Ser Phe Lys Ser Gln Gln Cys Leu
 485 490 495

Met Arg Asn Arg Asn Arg Lys Val Ser Arg Met Arg Cys Leu Gln Asn
500 505 510

Glu Thr Tyr Ser Ala Leu Ser Leu Ala Lys Val Arg Thr Leu Cys Phe
515 520 525

Arg Trp Ser Gln Glu Phe Ser Thr Leu Thr Leu Gly Gln Phe Gly
530 535 540

<210> 79
<211> 722
<212> DNA
<213> Homo sapiens

<400> 79
cgaccttccc agcaatatgc atcttgcacg tctggctcggc tcttgctccc tccttctgct 60
actggggggc ctgtctggat gggcgccag cgatgacccc attgagaagg tcattgaagg 120
gatcaaccga gggctgagca atgcagagag agaggtgggc aaggccctgg atggcatcaa 180
cagtggaatc acgcatgccg gaagggaagt ggagaagggt ttcaacggac ttagcaacat 240
ggggagccac accggcaagg agttggacaa aggcgtccag gggctcaacc acggcatgga 300
caaggttgcc catgagatca accatggtat tggacaagca ggaaaggaag cagagaagct 360
tggccatggg gtcaacaacg ctgctggaca gggcaaccat caaagcggat cttccagcca 420
tcaaggaggg gccacaacca cgccgttagc ctctggggcc tcggtcaaca cgcctttcat 480
caaccttccc gccctgtgga ggagcgtcgc caacatcatg ccctaaactg gcatccggcc 540
ttgctgggag aataatgtcg ccgttggtcac atcagctgac atgacctgga ggggttgggg 600
gtgggggaca ggtttctgaa atccctgaag ggggttgtag tgggatttgt gaataaactt 660
gatacactaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 720
aa 722

<210> 80
<211> 169
<212> PRT
<213> Homo sapiens

<400> 80

Met His Leu Ala Arg Leu Val Gly Ser Cys Ser Leu Leu Leu Leu Leu
1 5 10 15

Gly Ala Leu Ser Gly Trp Ala Ala Ser Asp Asp Pro Ile Glu Lys Val
20 25 30

Ile Glu Gly Ile Asn Arg Gly Leu Ser Asn Ala Glu Arg Glu Val Gly
 35 40 45

Lys Ala Leu Asp Gly Ile Asn Ser Gly Ile Thr His Ala Gly Arg Glu
 50 55 60

Val Glu Lys Val Phe Asn Gly Leu Ser Asn Met Gly Ser His Thr Gly
 65 70 75 80

Lys Glu Leu Asp Lys Gly Val Gln Gly Leu Asn His Gly Met Asp Lys
 85 90 95

Val Ala His Glu Ile Asn His Gly Ile Gly Gln Ala Gly Lys Glu Ala
 100 105 110

Glu Lys Leu Gly His Gly Val Asn Asn Ala Ala Gly Gln Gly Asn His
 115 120 125

Gln Ser Gly Ser Ser Ser His Gln Gly Gly Ala Thr Thr Thr Pro Leu
 130 135 140

Ala Ser Gly Ala Ser Val Asn Thr Pro Phe Ile Asn Leu Pro Ala Leu
 145 150 155 160

Trp Arg Ser Val Ala Asn Ile Met Pro
 165

<210> 81
 <211> 1240
 <212> DNA
 <213> Homo sapiens

<400> 81
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 agggacttcc aatctctcag agacagagcc ccctctgtgg aaggagagtc ctggtcagct 120
 cagtgactac aggggtggaga acagcatgta cattattaat ccctgggtat accttgagag 180
 aatggggatg tataaaatca tattgaatca gacagccagg tattttgcaa aatttgcacc 240
 agataatgaa cagaatattt tatgggggtt gcctctgcag tatggctggc aatataggac 300
 aggcagatta gctgatccaa cccgaaggac aaactgtggc tatgaatctg gagatcatat 360
 gtgcatctct gtggacagtt ggtgggctga tttgaattat tttctgtctt cattaccctt 420
 tcttgctgcg gttgattctg gtgtaatggg gatatcatca gaccaagtca ggcttttgcc 480
 cccaccaag aatgagagga agttttgtta tgatgtttct agctgtcggt catccttccc 540

| | |
|--|------|
| tgagacaatg aacaagtgga acacctttta ccagtatttg cagtcacctt ttagtaagtt | 600 |
| tgatgatctg ttgaagtact tatgggctgc acacacttca accttggcag ataatatcaa | 660 |
| aagttttgaa gacagatatg attattattc taaagcagaa gcgcattttg agagaagttg | 720 |
| ggtactggct gtggatcatt tagctgcagt cctctttcct acaaccttga ttagatcata | 780 |
| taagttccag aagggcatgc caccacgaat tcttcttaat actgatgtag cccctttcat | 840 |
| cagtgacttt actgcttttc agaatgtagt cctggttcct ctaaatatgc ttgacaatgt | 900 |
| ggataaatct ataggttatc tttgtacaga aaaatctaata gtatatagag atcattcgga | 960 |
| atctagctct agaagttatg gaaataactc ctgaaacatt taacttcaaa cttcaggaaa | 1020 |
| tgattaatga attaaaaatg aaaaactcga acttgacaat cagtaatttc aaaaaattaa | 1080 |
| tgtcatcatg accatgtagt ttattctttc tgatattttt gatttatgct tatttggttaa | 1140 |
| gatcttgtag atgtattaaa aacttaaaatt aaatgcattc aagttaaaaa aaaaaaaaaa | 1200 |
| aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa | 1240 |

<210> 82
 <211> 330
 <212> PRT
 <213> Homo sapiens

<400> 82

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Phe | Leu | Pro | Ser | Trp | Val | Cys | Val | Leu | Val | Gly | Ser | Phe | Ser |
| 1 | | | 5 | | | | | 10 | | | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Leu | Ala | Gly | Thr | Ser | Asn | Leu | Ser | Glu | Thr | Glu | Pro | Pro | Leu |
| | | 20 | | | | | 25 | | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Lys | Glu | Ser | Pro | Gly | Gln | Leu | Ser | Asp | Tyr | Arg | Val | Glu | Asn | Ser |
| | 35 | | | | | 40 | | | | | | 45 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Ile | Ile | Asn | Pro | Trp | Val | Tyr | Leu | Glu | Arg | Met | Gly | Met | Tyr |
| | 50 | | | | | 55 | | | | | 60 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ile | Ile | Leu | Asn | Gln | Thr | Ala | Arg | Tyr | Phe | Ala | Lys | Phe | Ala | Pro |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asn | Glu | Gln | Asn | Ile | Leu | Trp | Gly | Leu | Pro | Leu | Gln | Tyr | Gly | Trp |
| | | | | 85 | | | | | 90 | | | | | 95 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Tyr | Arg | Thr | Gly | Arg | Leu | Ala | Asp | Pro | Thr | Arg | Arg | Thr | Asn | Cys |
| | | | 100 | | | | | 105 | | | | | | 110 | |

Gly Tyr Glu Ser Gly Asp His Met Cys Ile Ser Val Asp Ser Trp Trp
 115 120 125

Ala Asp Leu Asn Tyr Phe Leu Ser Ser Leu Pro Phe Leu Ala Ala Val
 130 135 140

Asp Ser Gly Val Met Gly Ile Ser Ser Asp Gln Val Arg Leu Leu Pro
 145 150 155 160

Pro Pro Lys Asn Glu Arg Lys Phe Cys Tyr Asp Val Ser Ser Cys Arg
 165 170 175

Ser Ser Phe Pro Glu Thr Met Asn Lys Trp Asn Thr Phe Tyr Gln Tyr
 180 185 190

Leu Gln Ser Pro Phe Ser Lys Phe Asp Asp Leu Leu Lys Tyr Leu Trp
 195 200 205

Ala Ala His Thr Ser Thr Leu Ala Asp Asn Ile Lys Ser Phe Glu Asp
 210 215 220

Arg Tyr Asp Tyr Tyr Ser Lys Ala Glu Ala His Phe Glu Arg Ser Trp
 225 230 235 240

Val Leu Ala Val Asp His Leu Ala Ala Val Leu Phe Pro Thr Thr Leu
 245 250 255

Ile Arg Ser Tyr Lys Phe Gln Lys Gly Met Pro Pro Arg Ile Leu Leu
 260 265 270

Asn Thr Asp Val Ala Pro Phe Ile Ser Asp Phe Thr Ala Phe Gln Asn
 275 280 285

Val Val Leu Val Leu Leu Asn Met Leu Asp Asn Val Asp Lys Ser Ile
 290 295 300

Gly Tyr Leu Cys Thr Glu Lys Ser Asn Val Tyr Arg Asp His Ser Glu
 305 310 315 320

Ser Ser Ser Arg Ser Tyr Gly Asn Asn Ser
 325 330

<210> 83
 <211> 2261
 <212> DNA
 <213> Homo sapiens

<400> 83

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| aaccgccgcc agcaccatgg ccagcaccat ttccgcctac aaggagaaga tgaaggagct | 120 |
| gtcgggtgctg tgcgtcatct gtccttgctt ctacacacag ccgcacccca ataccttcta | 180 |
| ccagtacggg gacatggagg tgaagcagct ggacaagcgg gcctcaggcc agagcttcga | 240 |
| ggtcaccttc aagtccccctt ctgacctgtc cccagagagc cctatgctct cctccccacc | 300 |
| caagaagaag gacacctccc tggaggagct gcaaaagcgg ctggaggcag ccgaggagcg | 360 |
| gaggaagacg caggaggcgc aggtgctgaa gcagctggcg gagcggcgcg agcacgagcg | 420 |
| cgagggtgctg cacaaggcgc tggaggagaa taacaacttc agccgccagg cggaggagaa | 480 |
| gctcaactac aagatggagc tcagcaagga gatccgcgag gcacacctgg ccgcactgcg | 540 |
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| agaagagatg tcgggctaag ggcccgggac gggcggcgcc catcctgcga cagaacacgt | 660 |
| tcggggttttg gttttgtttc gttcacctct gtctagatgc aacttttgtt cctcctcccc | 720 |
| caccccagcc cccagcttca tgcttctctt ccgcactcag ccgccctgcc ctgtcctcgt | 780 |
| ggtgagtcgc tgaccacggc ttcccctgca ggagccgccg ggcgtgagac gcggtccctc | 840 |
| ggtgacagaca ccaggccggg cgcggctggg tccccgggg gccctgtgag agagggtggcg | 900 |
| gtgaccgtgg taaacctcagg gcggtggcgt gggatcgcg gtccttacgc tgggctgtct | 960 |
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| gctacagtac ctgctgtctt tccaggggga aggggctccc catgagggag gggcgacggg | 1080 |
| ggaggggggt gatggtgcct gggagcctgc gtgtgcagcc ggtgcttgtt gaactggcag | 1140 |
| gcgggtgggt gggggctgca gctttcctta atgtggttgc acaggggtcc tctgagacca | 1200 |
| cctggcgtga ggtggacacc ctgggccttc ctggaagcct gcagttgggg gcctgccctg | 1260 |
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| ttctttccct tggacgccc gtgctggcct tggaggacgg tcagctggag gatggcgggtg | 1740 |
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<210> 84
<211> 180
<212> PRT
<213> Homo sapiens

<400> 84

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Thr Val Tyr Gln Tyr Gly Asp Met Glu Val Lys Gln Leu Asp Lys Arg
35 40 45

Ala Ser Gly Gln Ser Phe Glu Val Ile Leu Lys Ser Pro Ser Asp Leu
50 55 60

Ser Pro Glu Ser Pro Met Leu Ser Ser Pro Pro Lys Lys Lys Asp Thr
65 70 75 80

Ser Leu Glu Glu Leu Gln Lys Arg Leu Glu Ala Ala Glu Glu Arg Arg
85 90 95

Lys Thr Gln Glu Ala Gln Val Leu Lys Gln Leu Ala Glu Arg Arg Glu
100 105 110

His Glu Arg Glu Val Leu His Lys Ala Leu Glu Glu Asn Asn Asn Phe
115 120 125

Ser Arg Gln Ala Glu Glu Lys Leu Asn Tyr Lys Met Glu Leu Ser Lys
130 135 140

Glu Ile Arg Glu Ala His Leu Ala Ala Leu Arg Glu Arg Leu Arg Glu
 145 150 155 160

Lys Glu Leu His Ala Ala Glu Val Arg Arg Asn Lys Glu Gln Arg Glu
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Glu Met Ser Gly
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<210> 85
 <211> 3109
 <212> DNA
 <213> Homo sapiens

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 atggatcact agtttttctg gaacatgtct tctgggtggt atctttaaat aactgttca 960
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 gatctcgtcg cttactggga gtctgctata ttgttgtaa ggtctctttg ttagtggtgg 1200
 tagaaattgg agtattccct ctcatattgtg gttggtggct ggatatctgt tccttgga 1260

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| tgtttgatgc tactctgaaa gatcgagaac tgagctttca gtcggctcca ggtactacca | 1320 |
| tgtttctgca ttggctagtg ggaatggtat atgtcttcta ctttgccctcc ttcattctat | 1380 |
| tactgagaga ggtacttcga cctggtgtcc tgtggtttct aaggaatttg aatgatccag | 1440 |
| atttcaatcc agtacaggaa atgatccatt tgccaatata taggcatctc cgaagattta | 1500 |
| ttttgtcagt gattgtcttt ggctccattg tcctcctgat gctttggctt cctatacgt | 1560 |
| taattaagag tgtgctgcct aattttcttc catacaatgt catgctctac agtgatgctc | 1620 |
| cagtgagtga actgtccctc gagctgcttc tgcttcaggt tgtcttgcca gcattactcg | 1680 |
| aacagggaca cacgaggcag tggctgaagg ggctggtgcg agcgtggact gtgaccgccg | 1740 |
| gatacttgct ggatcttcat tcttatttat tgggagacca ggaagaaaat gaaaacagt | 1800 |
| caaatcaaca agttaacaat aatcagcatg ctcgaaataa caacgctatt cctgtgggtg | 1860 |
| gagaaggcct tcatgcagcc caccaagcca tactccagca gggagggcct gttggctttc | 1920 |
| agccttaccg ccgaccttta aattttccac tcaggatatt tctgttgatt gtcttcatgt | 1980 |
| gtataacatt actgattgcc agcctcatct gccttacttt accagtattt gctggccgtt | 2040 |
| ggttaatgtc gttttggacg gggactgcca aaatccatga gctctacaca gctgcttgtg | 2100 |
| gtctctatgt ttgctggcta accataaggg ctgtgacggt gatgggtggca tggatgcctc | 2160 |
| agggacgcag agtgatcttc cagaaggtta aagagtggtc tctcatgac atgaagactt | 2220 |
| tgatagttagc ggtgctgttg gctggagttg tcctctctct tctggggctc ctgtttgagc | 2280 |
| tggtcattgt ggctcccctg agggttccct tggatcagac tcctcttttt tatccatggc | 2340 |
| aggactgggc acttgagtc ctgcatgcca aaatcattgc agctataaca ttgatgggtc | 2400 |
| ctcagtggtg gttgaaaact gtaattgaac aggtttacgc aaatggcatc cggaacattg | 2460 |
| accttacta tattgttcgt aaactggcag ctcccgatg ctctgtgctg ttgctttccc | 2520 |
| tgtgtgtacc ttatgtcata gcttctggtg ttgttccttt actaggtgtt actgcggaaa | 2580 |
| tgcaaaactt agtccatcgg cggattttat catttttact gatggtcgtg gtattgatgg | 2640 |
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| tgtaagattc tgctgttctc cctggatctt ctgacatkac tgctgtctga gatttgtata | 3000 |
| tgkgtaaata caagttcctt gataccctaa aaccttggat taaacagaat gtgcatkgta | 3060 |

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3109

<210> 86
<211> 750
<212> PRT
<213> Homo sapiens

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<222> (716)..(716)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (719)..(719)
<223> Xaa can be any naturally occurring amino acid

<400> 86

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20 25 30

Lys Met Leu Leu Leu Ile Ser Leu Leu Thr His Gln Leu Arg Thr Gln
35 40 45

Trp Trp Gly Lys Thr Leu Met Pro Arg Met Thr Arg Gln Lys Arg Arg
50 55 60

Arg Arg Thr Met Arg Arg Lys Met Thr Leu Val Trp Arg Met Ala Ala
65 70 75 80

Asp Ala Asn Asn Gly Ala Gln Asp Asp Met Asn Trp Asn Ala Leu Glu
85 90 95

Trp Asp Arg Ala Ala Glu Glu Leu Thr Trp Glu Arg Met Leu Gly Leu
100 105 110

Asp Gly Ser Leu Val Phe Leu Glu His Val Phe Trp Val Val Ser Leu
115 120 125

Asn Thr Leu Phe Ile Leu Val Phe Ala Phe Cys Pro Tyr His Ile Gly
130 135 140

His Phe Ser Leu Val Gly Leu Gly Phe Glu Glu His Val Gln Ala Ser
145 150 155 160

His Phe Glu Gly Leu Ile Thr Thr Ile Val Gly Tyr Ile Leu Leu Ala
 165 170 175

Ile Thr Leu Ile Ile Cys His Gly Leu Ala Thr Leu Val Lys Phe His
 180 185 190

Arg Ser Arg Arg Leu Leu Gly Val Cys Tyr Ile Val Val Lys Val Ser
 195 200 205

Leu Leu Val Val Val Glu Ile Gly Val Phe Pro Leu Ile Cys Gly Trp
 210 215 220

Trp Leu Asp Ile Cys Ser Leu Glu Met Phe Asp Ala Thr Leu Lys Asp
 225 230 235 240

Arg Glu Leu Ser Phe Gln Ser Ala Pro Gly Thr Thr Met Phe Leu His
 245 250 255

Trp Leu Val Gly Met Val Tyr Val Phe Tyr Phe Ala Ser Phe Ile Leu
 260 265 270

Leu Leu Arg Glu Val Leu Arg Pro Gly Val Leu Trp Phe Leu Arg Asn
 275 280 285

Leu Asn Asp Pro Asp Phe Asn Pro Val Gln Glu Met Ile His Leu Pro
 290 295 300

Ile Tyr Arg His Leu Arg Arg Phe Ile Leu Ser Val Ile Val Phe Gly
 305 310 315 320

Ser Ile Val Leu Leu Met Leu Trp Leu Pro Ile Arg Ile Ile Lys Ser
 325 330 335

Val Leu Pro Asn Phe Leu Pro Tyr Asn Val Met Leu Tyr Ser Asp Ala
 340 345 350

Pro Val Ser Glu Leu Ser Leu Glu Leu Leu Leu Gln Val Val Leu
 355 360 365

Pro Ala Leu Leu Glu Gln Gly His Thr Arg Gln Trp Leu Lys Gly Leu
 370 375 380

Val Arg Ala Trp Thr Val Thr Ala Gly Tyr Leu Leu Asp Leu His Ser
 385 390 395 400

Tyr Leu Leu Gly Asp Gln Glu Glu Asn Glu Asn Ser Ala Asn Gln Gln
 405 410 415
 Val Asn Asn Asn Gln His Ala Arg Asn Asn Asn Ala Ile Pro Val Val
 420 425 430
 Gly Glu Gly Leu His Ala Ala His Gln Ala Ile Leu Gln Gln Gly Gly
 435 440 445
 Pro Val Gly Phe Gln Pro Tyr Arg Arg Pro Leu Asn Phe Pro Leu Arg
 450 455 460
 Ile Phe Leu Leu Ile Val Phe Met Cys Ile Thr Leu Leu Ile Ala Ser
 465 470 475 480
 Leu Ile Cys Leu Thr Leu Pro Val Phe Ala Gly Arg Trp Leu Met Ser
 485 490 495
 Phe Trp Thr Gly Thr Ala Lys Ile His Glu Leu Tyr Thr Ala Ala Cys
 500 505 510
 Gly Leu Tyr Val Cys Trp Leu Thr Ile Arg Ala Val Thr Val Met Val
 515 520 525
 Ala Trp Met Pro Gln Gly Arg Arg Val Ile Phe Gln Lys Val Lys Glu
 530 535 540
 Trp Ser Leu Met Ile Met Lys Thr Leu Ile Val Ala Val Leu Leu Ala
 545 550 555 560
 Gly Val Val Pro Leu Leu Leu Gly Leu Leu Phe Glu Leu Val Ile Val
 565 570 575
 Ala Pro Leu Arg Val Pro Leu Asp Gln Thr Pro Leu Phe Tyr Pro Trp
 580 585 590
 Gln Asp Trp Ala Leu Gly Val Leu His Ala Lys Ile Ile Ala Ala Ile
 595 600 605
 Thr Leu Met Gly Pro Gln Trp Trp Leu Lys Thr Val Ile Glu Gln Val
 610 615 620
 Tyr Ala Asn Gly Ile Arg Asn Ile Asp Leu His Tyr Ile Val Arg Lys
 625 630 635 640

Leu Ala Ala Pro Val Ile Ser Val Leu Leu Leu Ser Leu Cys Val Pro
645 650 655

Tyr Val Ile Ala Ser Gly Val Val Pro Leu Leu Gly Val Thr Ala Glu
660 665 670

Met Gln Asn Leu Val His Arg Arg Ile Tyr Pro Phe Leu Leu Met Val
675 680 685

Val Val Leu Met Ala Ile Leu Ser Phe Gln Val Arg Gln Phe Lys Arg
690 695 700

Leu Tyr Glu His Ile Lys Asn Asp Lys Tyr Leu Xaa Gly Gln Xaa Leu
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Leu His Ser His Pro Lys Asn Lys Val Val Val Ser Thr Thr
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<210> 87
<211> 29
<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 87
tntttgaagt ttctccctct cattctgag

29

<210> 88
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<400> 88
gnttctccac gtagttgggt ttcctcagt

29

<210> 89
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<400> 89
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 <213> Homo sapiens

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<210> 91
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<400> 91
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<210> 92
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 <223> n is a, c, g, or t

<400> 92
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<210> 93
 <211> 29

<212> DNA
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 <223> n is a, c, g, or t

 <400> 93
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 <210> 94
 <211> 29
 <212> DNA
 <213> Homo sapiens

 <220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 94
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 <210> 95
 <211> 29
 <212> DNA
 <213> Homo sapiens

 <220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 95
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 <210> 96
 <211> 29
 <212> DNA
 <213> Homo sapiens

 <220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 96
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 <210> 97
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<212> DNA
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<400> 97
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<210> 98
 <211> 94
 <212> PRT
 <213> Homo sapiens

<400> 98

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Leu Leu Ile Pro Leu Phe Glu Phe Leu Cys Val Ser Phe Ala Phe Pro
20 25 30

Ser Gln Ser Gly Gly Val Arg Pro Ala Leu Trp Asp Glu Arg Ser Cys
35 40 45

Gly Tyr Val Ser Ala Gly Thr Lys Arg Ala Glu Gly Glu Val Trp Lys
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Gly Gln Gly Glu Glu Met Gly Ser Ile Val Lys Arg Leu Val Pro Leu
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Ser Lys Tyr Val Glu Asn Asp Asp Gly Lys Val Ser Pro Cys
85 90

<210> 99

<211> 2859

<212> DNA

<213> Homo sapiens

<400> 99

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| aggaaaggta taatatatgg aaaatatgca tctaaggcga gtgagaacca tgccccgaca | 180 |
| cagccagtcc ctgaccatgg caccatactc atctgtaagc ctcgtggagc agctggaaga | 240 |
| caggatcctc tgccatgaga aaaccaccgc cgccctcgta gagcacgcct ttcggattaa | 300 |
| agatgacatt gtcaacagtt tgcagaaaat gcaaaacaaa gggggagggtg accgcttggc | 360 |
| caggcttttc ttggaggagc atatcagaaa cataactgcc atagtgaagc aacttaatcg | 420 |
| ggatatcgag gtactccagg agcagattcg tgctcgggac aacattagct atggaactaa | 480 |
| ttctgcctta aagaccctgg agatgcgcca gctctccggt ttgggagatc ttcgaggaag | 540 |
| agtggcaaga tgtgatgcca gcatagctag actttctgca gagcacaaaa cgacctatga | 600 |
| ggggctccag cacttgaaca aagaacagca ggctgcaaaa cttatcttgg aaacgaaaat | 660 |
| caaagatgca gaggacaga tttctcagct tttgaacaga gtggacttgt caatatcaga | 720 |
| gcagagcacc aaactgaaga tgtctcacag agacagtaac caccagcttc agcttttggga | 780 |
| cactaaatth aaaggtacag ttgaggaact cagtaaccag atattatctg cacggagttg | 840 |
| gttgcaacag gaacaagaac ggatagaaaa agagctttta cagaaaattg atcagctttc | 900 |

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| gatgtcagcc aggcttgaca aaatagaaga ggggtcaaaag aagacttttg atggtcagag | 1020 |
| aacaaggcaa gaagaggaga agatgcacgg gcgaatcacc aagctggagt tacagatgaa | 1080 |
| ccagaacatc aaggaaatga aagcagaagt taatgctggg ttacagccg tctatgaaag | 1140 |
| cataggatcc ctcaggcaag ttctcgaggc caagatgaag ctggacaggg accagctaca | 1200 |
| gaagcaaatc cagctgatgc agaagccaga gacccccatg tgaagggagc tgggacaagg | 1260 |
| tcctaaaaga cagttttgcc agtggggcta ggagccggat acctctgtag ccaggccatc | 1320 |
| gctgcattca ggattgttcc atccatggcg tgcattgtcc aagaaatgtg tttttatggg | 1380 |
| tctaaatgtt taccttgagt cttgaaaata ctcttttgtt aaaagtatga aatacagttt | 1440 |
| ttaccagttt atttcacttc tctaaattca atggaaatcc cccgccctgg attttgaaag | 1500 |
| gcttttatct tcttcatttt acgaatggaa agacgacaat ttttcttcaa tgcttgatgc | 1560 |
| actaatgaag actgtttact attttgaaaa atgtcatggg gatttttttt taattaagaa | 1620 |
| actaatgaat catcacagga atgtgttgct cctcacccta aattaagaga atgtcccagt | 1680 |
| agattagact tcaacctttg agtccaattt ggattttatt atcgttgtct atgcacttct | 1740 |
| tatattgggt atcttcttgt aaatcttctg tcttttgtaa ggggaaagga tttaacattt | 1800 |
| agaataaacc ccaccattta tgtaatggaa atagtttaaa aattgctaac tgccatgtgg | 1860 |
| attgcaaatt aaatggaaac ttatttagat aacgtaaggc tcaatatctg cgttgaccac | 1920 |
| ctagatatta cagggtttta tttttaaacc ttttttgaa ttatccacaa cctgtatagt | 1980 |
| gatagccata tatttaataa tggaatgggt gttaacagtc tatttactgc acaattaatt | 2040 |
| gttcactaat caaatagaat gtggtaattt ttcagacttt atgatctgtt tccaaaattg | 2100 |
| gcacaaagtg ctagggttta tatacactta tcgtaactgt atttttgtgc cttgggtttta | 2160 |
| tcatgtcaat gcactgtact ctgtaaaagt tttgcagaca aaatagaaag tatgataatc | 2220 |
| cgtcagaagt atgatgtaaa actggaatcc tctgtatttt ttaaagtgtc taaaaatttt | 2280 |
| atcgctgtta aggtattaat cattcagtat tactaatgga atagaaattc atacttttgt | 2340 |
| atggacaaca aattgatatt gcatttatag cactgtaaga aactttcatc ttgagcaact | 2400 |
| ttgtagatga tgggtgtttt attttcaatc gccatatttg atcagtcatt gaaaattggc | 2460 |
| cccagtgtc tttgttcac tctgtatgta aaaactgaca gtgagacaca actttctgaa | 2520 |
| ctgtgaggggt gtcccaggaa aaagaaaaac aggaatactt taacaattaa aaagaaaaaa | 2580 |
| atgttttttg tttgccaagg actcaggaaa ataaaaagca ttttctattt ttaggacaaa | 2640 |
| tcacaaatga agtgtctaac tggctattac tgtttaccca tataaaatat gctgctaaag | 2700 |

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 <211> 368
 <212> PRT
 <213> Homo sapiens

<400> 100

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Gln Ser Leu Thr Met Ala Pro Tyr Ser Ser Val Ser Leu Val Glu Gln
 20 25 30

Leu Glu Asp Arg Ile Leu Cys His Glu Lys Thr Thr Ala Ala Leu Val
 35 40 45

Glu His Ala Phe Arg Ile Lys Asp Asp Ile Val Asn Ser Leu Gln Lys
 50 55 60

Met Gln Asn Lys Gly Gly Gly Asp Arg Leu Ala Arg Leu Phe Leu Glu
 65 70 75 80

Glu His Ile Arg Asn Ile Thr Ala Ile Val Lys Gln Leu Asn Arg Asp
 85 90 95

Ile Glu Val Leu Gln Glu Gln Ile Arg Ala Arg Asp Asn Ile Ser Tyr
 100 105 110

Gly Thr Asn Ser Ala Leu Lys Thr Leu Glu Met Arg Gln Leu Ser Gly
 115 120 125

Leu Gly Asp Leu Arg Gly Arg Val Ala Arg Cys Asp Ala Ser Ile Ala
 130 135 140

Arg Leu Ser Ala Glu His Lys Thr Thr Tyr Glu Gly Leu Gln His Leu
 145 150 155 160

Asn Lys Glu Gln Gln Ala Ala Lys Leu Ile Leu Glu Thr Lys Ile Lys
 165 170 175

Asp Ala Glu Gly Gln Ile Ser Gln Leu Leu Asn Arg Val Asp Leu Ser
 180 185 190

Ile Ser Glu Gln Ser Thr Lys Leu Lys Met Ser His Arg Asp Ser Asn
195 200 205

His Gln Leu Gln Leu Leu Asp Thr Lys Phe Lys Gly Thr Val Glu Glu
210 215 220

Leu Ser Asn Gln Ile Leu Ser Ala Arg Ser Trp Leu Gln Gln Glu Gln
225 230 235 240

Glu Arg Ile Glu Lys Glu Leu Leu Gln Lys Ile Asp Gln Leu Ser Leu
245 250 255

Ile Val Lys Glu Asn Ser Gly Ala Ser Glu Arg Asp Met Glu Lys Lys
260 265 270

Leu Ser Gln Met Ser Ala Arg Leu Asp Lys Ile Glu Glu Gly Gln Lys
275 280 285

Lys Thr Phe Asp Gly Gln Arg Thr Arg Gln Glu Glu Glu Lys Met His
290 295 300

Gly Arg Ile Thr Lys Leu Glu Leu Gln Met Asn Gln Asn Ile Lys Glu
305 310 315 320

Met Lys Ala Glu Val Asn Ala Gly Phe Thr Ala Val Tyr Glu Ser Ile
325 330 335

Gly Ser Leu Arg Gln Val Leu Glu Ala Lys Met Lys Leu Asp Arg Asp
340 345 350

Gln Leu Gln Lys Gln Ile Gln Leu Met Gln Lys Pro Glu Thr Pro Met
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<210> 101

<211> 933

<212> DNA

<213> Homo sapiens

<400> 101

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cttctcccaa cccggcagca tgggcctgga taagaacaca gtgcacgacc aagagtagct 180

attcagcccg ggctgtggtc cagtggcctc cccatcatct gcagctgagc cagcggcaag 240

ggcatgctca gtctctcttt ccttcttctt gtttctatgg ctctctgaca ttcttcaagg 300

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 ttttttcacc acagacagac acacacacat acaaataagac acacaggtac acatacacag 480
 tcatagtagc agaattccaga aaatagctaa ggtttcttga ctataacaag acctttttta 540
 aatcaacaca ttcaaacatt gaatcatttg ttgcagcttt tgtcttgggc cagttagcct 600
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 atcccagtg c tttgggaggc tgaggcaggt ggattacttg agcccaggaa ttcgagacca 720
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<210> 102
 <211> 92
 <212> PRT
 <213> Homo sapiens

<400> 102

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Trp Ala Phe Cys Ala Pro Gly Ala Arg Ala Glu Glu Pro Ala Ala Ser
 20 25 30

Phe Ser Gln Pro Gly Ser Met Gly Leu Asp Lys Asn Thr Val His Asp
 35 40 45

Gln Glu Tyr Val Phe Ser Pro Gly Cys Gly Pro Val Ala Ser Pro Ser
 50 55 60

Ser Ala Ala Glu Pro Ala Ala Arg Ala Cys Ser Val Leu Leu Ser Phe
 65 70 75 80

Phe Leu Phe Leu Trp Leu Leu Asp Ile Leu Gln Gly
 85 90

<210> 103
 <211> 2956
 <212> DNA
 <213> Homo sapiens

<400> 103

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| tacttcttag gattgttttg gagactcata aatgagaaat acgtgaaaaa ctccctcaag | 180 |
| gcagtgcctg acacataatg agcactcagt tatcatggtc atcatgggtca tcatcactgc | 240 |
| taccaccact gctgctgcta ttaccactct acctcttccc cctgaaactc taatcactta | 300 |
| ccctagaaac agttaaatca cacttcagtg ggaaggatct cagatttctt aatggcacct | 360 |
| gcatttatat aatgttgata ttgcacgttc ctagaaaaca tatcaagaag aaacaaaaat | 420 |
| gtgtttctgt actttgtaaa cctgtacaat agttagagat tagaggacct ttataatcta | 480 |
| ctactaatta ctgtgaaagt aaacattgtt taatatacca gttcttaaag aaatatattg | 540 |
| tctagtcatt aatattctag ttcattctca agcttccatt tgacaattta aaattactta | 600 |
| aattttaata ttaaaggaaa cagttttcct gattctcatg aaagtcccta tttgcactga | 660 |
| agatgactaa accttttagt catagtttta gaagaattgg cttttttata gccattttat | 720 |
| ttacatatgg gtactgcata gcaaaggcag cagattagcc ctgtttgttt tgcagggatg | 780 |
| aaaggtagca ttcccagaga ttaagttgtt cttgctattc ccattctctg ctacatttgc | 840 |
| ctacattctt tggtcctttc tattatttgt ttctttgggtg gaatcccctt gttgcttatg | 900 |
| gctggatatt gttattcagc agatgaatca caagtttagc ctgagggccc taaagcatca | 960 |
| gaaataaatt agagccgagc aaagtttaac ttctctggaa cttgcacctt tagtttccat | 1020 |
| gtatttctgg aaccaagata tttcaaaggc ttactttatt tcagacacct attatcttca | 1080 |
| agtcacagat aactattgat tctgtaaagt gtttcaaaga tttttgtcca ctagacattt | 1140 |
| ttaaatttgt tcaactcctc ctcattcatt tagaaaattat ttctgttagg taaaattaaa | 1200 |
| actaacaatg tatttttagt tatttttcta atgataccag tcacctttcg gggctaacta | 1260 |
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| taaggctgtc ctgtagcaaa caaaagagtg actcatgtta aaagtatttt aactgctcta | 1380 |
| atatatctga ggaagaataa ctttctaaat taaagtaatg tattttatta aatattaaaa | 1440 |
| tgcatttttt ggctattcat ttctgtatgt aaaagaaaag ttaactttat ggtgttatgc | 1500 |
| aaaatatgct aaatttagat tttagagcaa tatataggga gatatgtcac aaatttctac | 1560 |
| attttgggtta aattattagt atttttttat attcaaagt gccttgatat ttaaataata | 1620 |
| tactgaatgc agaatttatg ttatgtgaac cattatggaa aatgttaatg ttaacaaaat | 1680 |
| gaggtgtatt gacttttcaa caatgtaaat taaagatggg acatctactg ttttaaggga | 1740 |
| gaggaattaa aagagtatag atactgaaat gtatcactta ctagtagtgt ggctataatc | 1800 |

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aaattaatta atctctctct aggccttagc ttcctcatct tagtttggtc aggctactgt 1860
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taaaaaaaaa aaaaaa 2956

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<210> 104
<211> 31
<212> PRT
<213> Homo sapiens

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<400> 104

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Ala Ile Leu Phe Thr Tyr Gly Tyr Cys Ile Ala Lys Ala Ala Asp
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<210> 105
<211> 1325
<212> DNA
<213> Homo sapiens

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atcaaaatga agcttctcct ttgggcctgc attgtatgtg ttgcttttgc aaggaagaga 180
cggttcccct tcattggtga ggatgacaat gacgatggTc acccacttca tccatctctg 240
aatattcctt atggcatacg gaatttacca cctcctcttt attatcgccc agtgaataca 300
gtccccagtt accctgggaa tacttacact gacacagggT taccttcgta tccctggatt 360
ctaacttctc ctggattccc ctatgtctat cacatccgtg gttttccctt agctactcag 420
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tcagcagctg cagcacccgc tgccccacct attgcagctg agcctgctgc agctgcacct 540
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gctgcagagg cacctgttgg agctgagcct gctgcagagg cacctgttgc agctgagcct 660
gctgcagagg cacctgttgg agtggagcca gctgcagagg aaccttcacc agctgagcct 720
gctacagcca agcctgctgc ccagaaacT cacccttctc cctctcttga acaggcaaT 780
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aacctatggT aaacaacatg ttaatgaact atgctatcca tgacttaatg gacagttcaa 1260
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1320
aaaaa 1325

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<210> 106
<211> 219
<212> PRT
<213> Homo sapiens

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<400> 106

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1           5           10          15

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Lys Arg Arg Phe Pro Phe Ile Gly Glu Asp Asp Asn Asp Asp Gly His

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| | | |
|---|---------------------|---------------------------------|
| 20 | 25 | 30 |
| Pro Leu His | Pro Ser Leu Asn Ile | Pro Tyr Gly Ile Arg Asn Leu Pro |
| 35 | 40 | 45 |
| Pro Pro Leu Tyr Tyr Arg | Pro Val Asn Thr Val | Pro Ser Tyr Pro Gly |
| 50 | 55 | 60 |
| Asn Thr Tyr Thr Asp Thr Gly Leu Pro Ser Tyr | Pro Trp Ile Leu Thr | |
| 65 | 70 | 75 80 |
| Ser Pro Gly Phe Pro Tyr Val Tyr His Ile Arg Gly Phe Pro Leu Ala | | |
| | 85 | 90 95 |
| Thr Gln Leu Asn Val Pro Pro Leu Pro Pro Arg Gly Phe Pro Phe Val | | |
| | 100 | 105 110 |
| Pro Pro Ser Arg Phe Phe Ser Ala Ala Ala Ala Pro Ala Ala Pro Pro | | |
| | 115 | 120 125 |
| Ile Ala Ala Glu Pro Ala Ala Ala Ala Pro Leu Thr Ser Thr Pro Val | | |
| | 130 | 135 140 |
| Ala Ser Glu Pro Ala Ala Gly Ala Pro Val Ala Ala Glu Pro Ala Ala | | |
| | 145 | 150 155 160 |
| Glu Ala Pro Val Gly Ala Glu Pro Ala Ala Glu Ala Pro Val Ala Ala | | |
| | 165 | 170 175 |
| Glu Pro Ala Ala Glu Ala Pro Val Gly Val Glu Pro Ala Ala Glu Glu | | |
| | 180 | 185 190 |
| Pro Ser Pro Ala Glu Pro Ala Thr Ala Lys Pro Ala Ala Pro Glu Pro | | |
| | 195 | 200 205 |
| His Pro Ser Pro Ser Leu Glu Gln Ala Asn Gln | | |
| | 210 | 215 |

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cggcgacnga ggcccatcac gtgttcacat gctctcctgc gtcngtgctt gggagatatg 180

gactgtcntg tccttagacc acatttatnt caaggcaagg ggagc 225

<210> 108

<211> 533

<212> DNA

<213> Homo sapiens

<400> 108

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ctggaactca aggggaaaac taacgtaagt gcgaaagcga acaagcaaac atgtcctcaa 240

cggggcaggc aggctgtcgg ggtacagagc tgggatctgg gaaggaacag agagggccgc 300

tcagggagag gaagcacagt gccaccggag gcacgcactc agcaggcact cgcaggctgg 360

gcagaggtag agaagcagcg ctgcacaggc aggcagctga cccagggctc ttagagccgg 420
gcaggagagc tgggtgtggga cctgggagga ggacaggagc cttcaaagca gcaccgcctg 480
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<210> 109
<211> 101
<212> PRT
<213> Homo sapiens

<400> 109

Met Ser Ser Thr Gly Gln Ala Gly Cys Arg Gly Thr Glu Leu Gly Ser
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Gly Lys Glu Gln Arg Gly Pro Leu Arg Glu Arg Lys His Ser Ala Thr
20 25 30

Gly Gly Thr His Ser Ala Gly Thr Arg Arg Leu Gly Arg Gly Arg Glu
35 40 45

Ala Ala Leu His Arg Gln Ala Ala Asp Pro Gly Leu Leu Glu Pro Gly
50 55 60

Arg Arg Ala Gly Val Gly Pro Gly Arg Arg Thr Gly Ala Phe Lys Ala
65 70 75 80

Ala Pro Pro Asp Cys Ser Gln Glu Gly Ser Ile Lys Glu Asp Gly Thr
85 90 95

Ala Ala Arg Pro His
100

<210> 110
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<212> DNA
<213> Homo sapiens

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 <212> DNA
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 cactgtgccc ggctgtatt gttttaagtt acacttattc cttttaaaat tcagaatttg 180
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<210> 112
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<212>  PRT
<213>  Homo sapiens

<400>  112

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Val Ala Cys Leu Cys Gly Ile Phe Leu Asp Ile Tyr Ile Arg Ser Tyr
          20          25          30

Ile Gly Tyr Leu Trp Ala Gly Tyr Tyr Trp Val Ala Cys Gly
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<210>  113
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<220>
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<222>  (784)..(784)
<223>  n is a, c, g, or t

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<220>
<221>  misc_feature
<222>  (807)..(807)
<223>  n is a, c, g, or t

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<220>
<221>  misc_feature

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<222> (811)..(811)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (814)..(814)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (826)..(826)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (1050)..(1050)
 <223> n is a, c, g, or t

<400> 113
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 tatttgcaag tattgagggt gacctgaaaa acaatgaaac acatgaacac acttccgatt 120
 ttctcctcgc tgattagctt cctgcctgct gtcagtgtgc gacgaagtgc tataactact 180
 ttatgtaaca ttacagaaca gctagagggt ctggggtaag agaaaaaaag cacatcacia 240
 caaatgtgaa agccttcatt attacacgtt ccagtttgtc tcgctgtgta ggcataagct 300
 aatggtttat tttcagaaaag ctgcctgaaa cgttgctttg tattcttcta ggaagaactt 360
 taattcctcc tgaggaactc tactttctga gccaaactgc taattttctg cggaactgtc 420
 tagaagatca ttcaagagac cctgcagttg cactttctcg taaaagttaa aaaaaaaaaa 480
 aaaaaaaaag gtttttcccg gcctttgaac attttgccta tgagagtttt gcatatattt 540
 tatacttgag tagacaactt taataatcca tatttatact atcgcagaag taagcatttg 600
 gcaaacgttc agccattagc actcatttaa ccctgttagc aatattcttt tgaaaaaagt 660
 gccagtcctt atgtgataaa ctaagaagcc cattgaatat aaaantgtgt nggactgaaa 720
 cngtgacctt atattattgc taagggaata tgagattaac ttcctacagg ggccanaacc 780
 ananaaaggc ttccagcaac ttcgatnaaa ntantttggc cacatntcaa gccaatgtgt 840
 tgtactatth atgtaccttt ttcataactg gaattgccaa ataagcatgg agatctaaat 900
 graaaaaaaaa aaaaaaaaaa aaagcggccg caggtctaga attcaatcgg aaaaaacaaa 960
 gagaagaaac atactgcccc atcttgtttg catgaaactc tagaatctgg tgtttctcta 1020
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 tttttacctt aagtttaaac tttttattat tattttctct cttaaattctt gctagttaat 1140
 aacattatta acttcaagat tttagaagag cagtgatgat agtaatgatc gataactaga 1200
 ctatcgagtt tcagaagaaa cttccaagta tatataatgt ttgacatagc ctttatttct 1260

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 cttacacctg taatcccagc agtttgggag cctgaggtgg gcagattgct tgagcccagg 1380
 agttggagac aagcctggac aaaatagacc tctctctaca aaaagtacaa aaaattggct 1440
 ggggtgtggtg gcacacgcct gtgggtcccag ctactcggga ggctgaggtg ggaggattgc 1500
 ctgagcccgg gagatgggtg ttgcagtgg ctgagatcac cccattgcac tccagcctgg 1560
 ataacagaat aagatgctgt cttaaaaaaa aaaaaaaa 1598

<210> 114
 <211> 41
 <212> PRT
 <213> Homo sapiens

<400> 114

Met Lys His Met Asn Thr Leu Pro Ile Phe Ser Ser Leu Ile Ser Phe
 1 5 10 15

Leu Pro Ala Val Ser Ala Gly Arg Ser Ala Ile Thr Thr Leu Cys Asn
 20 25 30

Ile Thr Glu Gln Leu Glu Val Leu Gly
 35 40

<210> 115
 <211> 1257
 <212> DNA
 <213> Homo sapiens

<400> 115

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 cccagtccag cgcgacgagg aagaggaaaa agaagtcgaa aatgaggatg aagacgatga 120
 tgacagtgc aaggaaaagg atgaagagga cgaggtcatt gacgaggaag tgaatattga 180
 atttgaagct tattccctat cagataatga ttatgacgga attaagaaat tactgcagca 240
 gctttttcta aaggctcctg tgaacactgc agaactaaca gatctcttaa ttcaacagaa 300
 ccatattggg agtgtgatta agcaaacgga tgtttcagaa gacagcaatg atgatatgga 360
 tgaagatgag gtttttggtt tcataagcct tttaaattta actgaaagaa agggtagcca 420
 gtgtgttgaa caaattcaag agttggttmt acgcttctgt gagaagaact gtgaaaagag 480
 catggttgaa cagctggaca agtttttaaa tgacaccacc aagcctgtgg gccttctcct 540
 aagtgaaga ttcattaatg tccctccaca gatcgctctg cccatgtacc agcagcttca 600
 gaaagaactg kcgggggcac acagaaccaa taagccatgt gggaagtgct acttttacct 660


```

tctgattagt aagacatttg tggaagcagg aaaaaacaat tccaaaaaga aacctagcaa      720
caaaaagaaa gctgcgtaa  tgtttgcaaa tgcagaggaa gaatttttct atgagaaggc      780
aattctcaag ttcaactact cagtgcagga ggagagcgac acttgtctgg  gaggcaaatg      840
gtcttttgat gacgtaccaa tgacgccctt gcgaactgtg atgttaattc caggcgacaa      900
gatgaacgaa atcatggata aactgaaaga atatctatct gtctaacca tttccaatgg      960
acagtgatgg gcttggtttt gtaaaattac cagaaaactc agtggagatt tactgaaaaa     1020
ctcagacttt attcagatta agttcctcta caaaaagtag ggttctgtcc catgtgtytc     1080
tgacacattt acaaaatacc agttttttta aattttggtc aaattatgag tggttgattt     1140
aaaaactttt ccaagaagaa gaaaagcatg gagtagtaat ttaaagaact caataaaaac     1200
ttctattttt tatttttaaaa taataaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa     1257

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<210> 116
<211> 314
<212> PRT
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (150)..(150)
<223> Xaa can be any naturally occurring amino acid

```

```

<220>
<221> misc_feature
<222> (204)..(204)
<223> Xaa can be any naturally occurring amino acid

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<400> 116

```

```

Met Ala Ser Arg Ser Lys Arg Arg Ala Val Glu Ser Gly Val Pro Gln
1           5           10          15

```

```

Pro Pro Asp Pro Pro Val Gln Arg Asp Glu Glu Glu Glu Lys Glu Val
          20           25           30

```

```

Glu Asn Glu Asp Glu Asp Asp Asp Asp Ser Asp Lys Glu Lys Asp Glu
          35           40           45

```

```

Glu Asp Glu Val Ile Asp Glu Glu Val Asn Ile Glu Phe Glu Ala Tyr
          50           55           60

```

```

Ser Leu Ser Asp Asn Asp Tyr Asp Gly Ile Lys Lys Leu Leu Gln Gln
65           70           75           80

```

```

Leu Phe Leu Lys Ala Pro Val Asn Thr Ala Glu Leu Thr Asp Leu Leu

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | 85 | | | | | | 90 | | | | | 95 |
| Ile | Gln | Gln | Asn | His | Ile | Gly | Ser | Val | Ile | Lys | Gln | Thr | Asp | Val | Ser |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Glu | Asp | Ser | Asn | Asp | Asp | Met | Asp | Glu | Asp | Glu | Val | Phe | Gly | Phe | Ile |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ser | Leu | Leu | Asn | Leu | Thr | Glu | Arg | Lys | Gly | Thr | Gln | Cys | Val | Glu | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ile | Gln | Glu | Leu | Val | Xaa | Arg | Phe | Cys | Glu | Lys | Asn | Cys | Glu | Lys | Ser |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Met | Val | Glu | Gln | Leu | Asp | Lys | Phe | Leu | Asn | Asp | Thr | Thr | Lys | Pro | Val |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Gly | Leu | Leu | Leu | Ser | Glu | Arg | Phe | Ile | Asn | Val | Pro | Pro | Gln | Ile | Ala |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Pro | Met | Tyr | Gln | Gln | Leu | Gln | Lys | Glu | Leu | Xaa | Gly | Ala | His | Arg |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Thr | Asn | Lys | Pro | Cys | Gly | Lys | Cys | Tyr | Phe | Tyr | Leu | Leu | Ile | Ser | Lys |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Thr | Phe | Val | Glu | Ala | Gly | Lys | Asn | Asn | Ser | Lys | Lys | Lys | Pro | Ser | Asn |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Lys | Lys | Ala | Ala | Leu | Met | Phe | Ala | Asn | Ala | Glu | Glu | Glu | Phe | Phe |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Tyr | Glu | Lys | Ala | Ile | Leu | Lys | Phe | Asn | Tyr | Ser | Val | Gln | Glu | Glu | Ser |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Asp | Thr | Cys | Leu | Gly | Gly | Lys | Trp | Ser | Phe | Asp | Asp | Val | Pro | Met | Thr |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Pro | Leu | Arg | Thr | Val | Met | Leu | Ile | Pro | Gly | Asp | Lys | Met | Asn | Glu | Ile |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Met | Asp | Lys | Leu | Lys | Glu | Tyr | Leu | Ser | Val | | | | | | |
| 305 | | | | | 310 | | | | | | | | | | |

<210> 117

<211> 1544
 <212> DNA
 <213> Homo sapiens

<400> 117
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 gaccctccgc cagcgcatag ccgcaggccg gtgtgacttc tgcaccctcg gttctgaggg 120
 tacggtgacc cctagtgggc agtttgcaaa atgtgattcc ttcttcccaa ctccccatcc 180
 ccccttcctt tcccgtcacg tcctgtttgg gggtaattc ggttttttct ctgttgcatc 240
 gcgcctactg tgcgtgtgcg atarcgtgtg tgggggtgag agtttgtttt ctggaatggt 300
 aggtgctggg aggaggagtt tgatggaggg ctctctggct gcttctggcc ctcacctcgt 360
 ggaggccttc acagagaccc tgtgggccct ggccctgtgc tggcactgtg ccagtcatga 420
 ggcagctctg atcacttccc cactgtggaa acaggactga cccagccttc agtgtgggct 480
 gctgaagcta tcctcctcag gcctcagggg tgacctcctg cctgagcctc tcacaggctg 540
 gctgtggggc agtttcatct gctttcctgt tgggggtccc gggcctctgc tgtccttgac 600
 ccactggtgt tctgtgcaag gcttcttccc attcaccaag tgcacacctt gcctctgccg 660
 ctggcatgc accagttcca cacaccatcc cattttacag acaaggacgc tgaggcctgc 720
 agcagcagtg tgacttgctc aaggccagt gagtgacctc attccccaga aaaggctcct 780
 cccacaccag agtacagcct gggtaggggg aaaatcagtt ctttcagcta ccaccatcc 840
 aacctttggg cctatgtgaa aagaaaggaa ctaagctggg tgtgttctgt ctggacctgg 900
 ggaggcccct gaaggcaaag agggaaactg tcccagctgt tctgtcctag gggaggggga 960
 catagcccta gcaggagctc ccagcccctc ttggcactct gacacacaag tacaccatc 1020
 tggggcccgc tttgccacga agagctgggc aggcctgcag ggtgtgggga aggaggacac 1080
 aacctcaaga aaggaagcgt gaaccccgagg gaacagcggg tcccttcctt cctcagacac 1140
 aagccacctc agcttggtgg tcttggtccc cagccccacc aaccacctg ttcatttatt 1200
 caacagacaa tgacagctga tatttattgg acatttgac catgccaagc attcggcttg 1260
 gattatccca tttgtttctc acagccggta tttattgtct gtcctctgt gccagggtgt 1320
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 gtgaggctga cccaagccca cccattgcc aacagggccca gggcaagagt acacacaggg 1440
 gcctcatacc atatgtctaa atatttaaaa gttatcaatc aagctaacaa ctgttaaata 1500
 aaatatgttc tattctccta ctttgaaaaa aaaaaaaaaa aaaa 1544

<210> 118
 <211> 72

<212> PRT
<213> Homo sapiens

<400> 118

Met Pro Ser Ile Arg Leu Gly Leu Ser His Leu Phe Leu Thr Ala Gly
1 5 10 15

Ile Tyr Cys Leu Leu Leu Cys Ala Arg Cys Cys Ala Leu Gly Arg Gly
20 25 30

Thr Ala Trp Ala Ala Cys Pro Gly Gly Ala Cys Gly Leu Met Gly Glu
35 40 45

Ala Asp Pro Ser Pro Pro His Cys Gln Gln Gly Gln Gly Lys Ser Thr
50 55 60

His Arg Gly Leu Ile Pro Tyr Val
65 70

<210> 119
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 119
cnatgcaggt ctaactcctc cactctggg

29

<210> 120
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 120
tnagtttggt gctctgctct gatattgac

29

<210> 121
<211> 29
<212> DNA
<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 121
 gncatcaata tccttacggt ctccgaagc 29

 <210> 122
 <211> 29
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 122
 gnaaatagga actttcatga gaatcagga 29

 <210> 123
 <211> 29
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 123
 anacaatgca ggcccaaagg agaagcttc 29

 <210> 124
 <211> 29
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 124
 gnttgcttgt tcgctttcgc acttacggt 29

 <210> 125
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 125
 antggttagca tcttgctatt ttcatttga 29

<210> 126
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 126
 tnggaagtgt gttcatgtgt ttcattgtt 29

<210> 127
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 127
 gncctcgtcc tcttcaccc tttccttgt 29

<210> 128
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

 <400> 128
 ancacctggc acagaggagc agacaataa 29

<210> 129
 <211> 2271
 <212> DNA
 <213> Homo sapiens

 <400> 129

| | |
|---|------|
| ggcgagcctt tgaggggaac gacttgtcgg agccctaacc aggggtatct ctgagcctgg | 60 |
| tgggatcccc ggagcgtcac atcactttcc gatcacttca aagtgttaagg ggggccctac | 120 |
| tgacccttgg aatttagggg ggctacccta ggcgggcatcc acaacagaga gaattccctt | 180 |
| ggagagggga ccctggtgct cggctgtccc tctcatccgc gtagaaagtc cctcatctgg | 240 |
| gggctcccga actcagccct ctcacattgt ggccggcttt actgaccctc acagaccag | 300 |
| gctgggccct cccgatagag gccagccaaa ggttcactca gcctctcttt caaggctggg | 360 |
| gtatctctaa atcttagacc ctccctccgtt accgtcagcc aggtgggatg cccacgtttt | 420 |
| ggagagaaaac cgttctgagg aaccggggcc tctgggtccc agctggctct ccggccccc | 480 |
| ggttatgtat tctgggttgg ccacaaacag tggaaattcta ggcactcccg ggacaggggtg | 540 |
| ggactgctgt cctcattcat gcaaccagca aatattcacg gcaccttggt tgtgccagac | 600 |
| agcagaccga ggacacggtt gttaccaaga ccaggctggt gccttggaag agcccagagc | 660 |
| gtgtcaaggg agacagccac atcacgccag aaatacatga cagctggatt agccctggga | 720 |
| gagggaggcc cagatgtggg agctcagggg aggtgcagct caacgtggag tttggaggag | 780 |
| gctaccttga cctttgaatg ccaagtggga gccagccaga tgaaaggggt taaaaactaa | 840 |
| tatttatatg acagaagaaa aagatgtcat tccgtaaaagt aaacatcatc atcttgggcc | 900 |
| tggctgttgc tctcttctta ctggttttgc accataactt cctcagcttg agcagtttgt | 960 |
| taaggaatga gggtacagat tcaggaattg tagggcctca acctatagac tttgtcccaa | 1020 |
| atgctctccg acatgcagta gatgggagac aagaggagat tcctgtgggc atcgctgcat | 1080 |
| ctgaagacag gcttgggggg gccattgcag ctataaacag cattcagcac aacactcgct | 1140 |
| ccaatgtgat tttctacatt gttactctca acaatacagc agaccatctc cggctcctggc | 1200 |
| tcaacagtga ttccctgaaa agcatcagat acaaaaattgt caattttgac cctaaaacttt | 1260 |
| tggaaggaaa agtaaaggag gatcctgacc agggggaatc catgaaacct gtgatattct | 1320 |
| tgccctttac aatacagcac tgaagccagg acatgcagct gcattttcag aagattgtga | 1380 |
| ttcagcctct actaaagtgt tcatccgtgg agcaggaaac cagtacaatt acattggcta | 1440 |
| tcttgactat aaaaaggaaa gaattcgtaa gctttccatg aaagccagca cttgctcatt | 1500 |
| taatcctgga gtttttgtg caaacctgac ggaatggaaa cgacagaata taactaacca | 1560 |
| actggaaaaa tggatgaaac tcaatgtaga agagggactg tatagcagaa ccctggctgg | 1620 |
| tagcatcaca acacctctc tgcttatcgt attttatcaa cagcactcta ccatcgatcc | 1680 |
| tatgtggaat gtccgccacc ttgggtccag tgctggaaaa cgatattcac ctgagtttgt | 1740 |
| aaaggctgcc aagttactcc attggaatgg acatttgaag ccatggggaa ggactgcttc | 1800 |

atatactgat gtttgggaaa aatggtatat tccagaccca acaggcaaat tcaacctaata 1860
 ccgaagatat accgagatct caaacataaa gtgaaacaga atttgaactg taagcaagca 1920
 tttctcagga agtcctggaa gatagcatgc gtgggaagta acagttgcta ggcttcaatg 1980
 cctatcggta gcaagccatg gaaaaagatg tgtcagctag gtaaagatga caaactgccc 2040
 tgtctggcag tcagcttccc agacagacta tagactataa atatgtctcc atctgcctta 2100
 ccaagtgttt tcttactaca atgctgaatg actggaaaga agaactgata tggctagttc 2160
 agctagctgg tacagataat tcaaaaactgc tgttggtttt aattttgtaa cctgtggcct 2220
 gatctgtaaa taaaacttac atttttcaat aggaaaaaaaa aaaaaaaaaa a 2271

<210> 130
 <211> 159
 <212> PRT
 <213> Homo sapiens

<400> 130

Met Ser Phe Arg Lys Val Asn Ile Ile Ile Leu Val Leu Ala Val Ala
 1 5 10 15

Leu Phe Leu Leu Val Leu His His Asn Phe Leu Ser Leu Ser Ser Leu
 20 25 30

Leu Arg Asn Glu Val Thr Asp Ser Gly Ile Val Gly Pro Gln Pro Ile
 35 40 45

Asp Phe Val Pro Asn Ala Leu Arg His Ala Val Asp Gly Arg Gln Glu
 50 55 60

Glu Ile Pro Val Val Ile Ala Ala Ser Glu Asp Arg Leu Gly Gly Ala
 65 70 75 80

Ile Ala Ala Ile Asn Ser Ile Gln His Asn Thr Arg Ser Asn Val Ile
 85 90 95

Phe Tyr Ile Val Thr Leu Asn Asn Thr Ala Asp His Leu Arg Ser Trp
 100 105 110

Leu Asn Ser Asp Ser Leu Lys Ser Ile Arg Tyr Lys Ile Val Asn Phe
 115 120 125

Asp Pro Lys Leu Leu Glu Gly Lys Val Lys Glu Asp Pro Asp Gln Gly
 130 135 140

Glu Ser Met Lys Pro Val Ile Phe Leu Pro Phe Thr Ile Gln His
 145 150 155

<210> 131
 <211> 1425
 <212> DNA
 <213> Homo sapiens

<400> 131
 gccgaccgaa gaggctggac atgacaccag tggcatatca cggccatggg gtctcagcat 60
 tccgctgctg ctcgcccctc ctctgcagg cgaaagcaag aagatgacag ggacggtttg 120
 ctggctgaac gagagcagga agaagccatt gctcagttcc catatgtgga attcaccggg 180
 agagatagca tcacctgtct cacgtgccag gggacaggct acattccaac agagcaagta 240
 aatgagttgg tggctttgat cccacacagt gatcagagat tgcgccctca gcgaactaag 300
 caatatgtcc tcctgtccat cctgctttgt ctctggcat ctggtttggt ggttttcttc 360
 ctgtttccgc attcagtcct tgtggatgat gacggcatca aagtggtgaa agtcacattt 420
 aataagcaag actcccttgt aattctcacc atcatggcca ccctgaaaat caggaactcc 480
 aacttctaca cgggtggcagt gaccagcctg tccagccaga ttcagtacat gaacacagtg 540
 gtgaatttta ccgggaaggc cgagatggga ggaccgtttt cctatgtgta cttcttctgc 600
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 tcatacattg gcctcatgac ccagagctcc ttggagacac atcactatgt ggattgtgga 720
 ggaaattcca cagctattta acaactgcta ttggttcttc cacacagcgc ctgtagaaga 780
 gagcacagca tatgttccca aggctgagt tctggaccta ccccccacgtg gtgtaagcag 840
 aggaggaatt ggttcactta actcccagca aacatcctcc tgccacttag gaggaaacac 900
 ctccctatgg taccatttat gtttctcaga accagcagaa tcagtgccta gcctgtgccc 960
 agcaaatagt tggcactcaa taaagatttg cagaatttaa tacagatctt ttcagctgtt 1020
 cttagggcat tataaatgga aatcataacg tggttctagg ttatcaaacc atggagtgat 1080
 gtggagctag gattgtgagt gacctgcagg ccattatcag tgcctcatct gtgcagaagt 1140
 ggcagcagag agggaccatc caaataccta agagaaaaca gacctagtca ggatatgaat 1200
 ttgtttcagc tgttcccaaa ggcctgggag ctttttgaaa agaaagaaaa aagtgtgttg 1260
 gctttttttt tttttagaaa gttagaattg tttttaccaa gagtctatgt ggggcttgat 1320
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 ttttgattca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 1425

<210> 132

<211> 231
 <212> PRT
 <213> Homo sapiens

<400> 132

Met Gly Ser Gln His Ser Ala Ala Ala Arg Pro Ser Ser Cys Arg Arg
 1 5 10 15

Lys Gln Glu Asp Asp Arg Asp Gly Leu Leu Ala Glu Arg Glu Gln Glu
 20 25 30

Glu Ala Ile Ala Gln Phe Pro Tyr Val Glu Phe Thr Gly Arg Asp Ser
 35 40 45

Ile Thr Cys Leu Thr Cys Gln Gly Thr Gly Tyr Ile Pro Thr Glu Gln
 50 55 60

Val Asn Glu Leu Val Ala Leu Ile Pro His Ser Asp Gln Arg Leu Arg
 65 70 75 80

Pro Gln Arg Thr Lys Gln Tyr Val Leu Leu Ser Ile Leu Leu Cys Leu
 85 90 95

Leu Ala Ser Gly Leu Val Val Phe Phe Leu Phe Pro His Ser Val Leu
 100 105 110

Val Asp Asp Asp Gly Ile Lys Val Val Lys Val Thr Phe Asn Lys Gln
 115 120 125

Asp Ser Leu Val Ile Leu Thr Ile Met Ala Thr Leu Lys Ile Arg Asn
 130 135 140

Ser Asn Phe Tyr Thr Val Ala Val Thr Ser Leu Ser Ser Gln Ile Gln
 145 150 155 160

Tyr Met Asn Thr Val Val Asn Phe Thr Gly Lys Ala Glu Met Gly Gly
 165 170 175

Pro Phe Ser Tyr Val Tyr Phe Phe Cys Thr Val Pro Glu Ile Leu Val
 180 185 190

His Asn Ile Val Ile Phe Met Arg Thr Ser Val Lys Ile Ser Tyr Ile
 195 200 205

Gly Leu Met Thr Gln Ser Ser Leu Glu Thr His His Tyr Val Asp Cys
 210 215 220

Gly Gly Asn Ser Thr Ala Ile
 225 230

<210> 133
 <211> 1921
 <212> DNA
 <213> Homo sapiens

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 <223> n is a, c, g, or t

<220>
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 <222> (1332)..(1332)
 <223> n is a, c, g, or t

<400> 133
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 ccgtctttat tctgtgggct ctgattctcc aatgggaata ccaagggatg gttttccata 180
 ctggaacca aaggtaaaga cactcaaaga cagacatttt tggcagagca tagatgaaaa 240
 tggcaagttc cctggctttc cttctgctca actttcatgt ctccctcctc ttggtccagc 300
 tgctcactcc ttgctcagct cagttttctg tgcttggacc ctctgggccc atcctggcca 360
 tgggtgggtga agacgctgat ctgccctgtc acctgttccc gaccatgagt gcagagacca 420
 tggagctgaa gtgggtaagt tccagcctaa ggcaggtggg gaatgtgtat gcagatggaa 480
 aggaagtgga agacaggcag agtgcaccgt atcgaggag aacttcgatt ctgcgggatg 540
 gcatcactgc aggggaaggct gctctccgaa tacacaacgt cacagcctct gacagtggaa 600
 agtacttgtg ttatttccaa gatggtgact tctatgaaaa agccctgggtg gagctgaagg 660
 ttgcagcact gggttctaata cttcacgtcg aagtgaaggg ttatgaggat ggagggatcc 720
 acctggagtg caggtccacc ggctggtacc cccaaccca aatacagtgg agcaacgcca 780
 agggagagaa catcccagct gtggaagcac ctgtggttgc agacggagtg ggcctatatg 840
 aagtagcagc atctgtgatc atgaaaggcg gctccgggga ggggtgtatcc tgcacatca 900
 gaaattccct cctcggcctg gaaaagacag ccagcatttc catcgagac cccttcttca 960
 ggagcgcca gccctggatc gcagccctgg caggaccct gcctatcttg ctgctgcttc 1020
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 agatagaaag tgagcaagag atgaaagaaa tgggatatgc tgcaacagag cgggaaataa 1140

gcctaagaga gagcctccag gaggaactca agaggaaaaa aatccagtac ttgactcgtg 1200
gagaggagtc ttcgtccgat accaataagt cagcctgatg ctctaattgga aaaatggccc 1260
tcttcaagcc tgcctgattt ttcctgcatg ggaagagcgc acatgtngcc ctgaggttcc 1320
cttcccagga cngctccagg atcgagatca ctgtgagtgg ttgtggagtt aagacccta 1380
tggtactcctt cccagctgat tatcagagcc ttagaccag cactccttgg attggctctg 1440
cagagtgtct tggttgagag aataacgttg cagttcccac agggcatgtg actttgaaag 1500
agactaaagg ccacactctg ttaataatgg ggcacatatg tgttcccacc ccacaaatgt 1560
gataagtgat cgtgcagcca gagccagcct tccttcagtc aagggtttcca ggcagagcaa 1620
ataccctaga gattctctgt aatattggta atttgatga aggaagctag aagaattaca 1680
gggatgtttt taatcccact atggactcag tctcctggaa aaggatctgt ccactcctgg 1740
tcattggtgg atgttaaacc catattcctt tcaactgctg cctgctaggg aaaactgctc 1800
ctcattatca tcactattat tgctcaccac tgtatcccct ctactgggca agtgcttgctc 1860
aagttctagt tgttcaataa atttgттаат aatgctgaaa aaaaaaaaaa aaaaaaaaaa 1920
a 1921

<210> 134
<211> 334
<212> PRT
<213> Homo sapiens

<400> 134

Met Lys Met Ala Ser Ser Leu Ala Phe Leu Leu Leu Asn Phe His Val
1 5 10 15

Ser Leu Leu Leu Val Gln Leu Leu Thr Pro Cys Ser Ala Gln Phe Ser
20 25 30

Val Leu Gly Pro Ser Gly Pro Ile Leu Ala Met Val Gly Glu Asp Ala
35 40 45

Asp Leu Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu
50 55 60

Leu Lys Trp Val Ser Ser Ser Leu Arg Gln Val Val Asn Val Tyr Ala
65 70 75 80

Asp Gly Lys Glu Val Glu Asp Arg Gln Ser Ala Pro Tyr Arg Gly Arg
85 90 95

Thr Ser Ile Leu Arg Asp Gly Ile Thr Ala Gly Lys Ala Ala Leu Arg
 100 105 110
 Ile His Asn Val Thr Ala Ser Asp Ser Gly Lys Tyr Leu Cys Tyr Phe
 115 120 125
 Gln Asp Gly Asp Phe Tyr Glu Lys Ala Leu Val Glu Leu Lys Val Ala
 130 135 140
 Ala Leu Gly Ser Asn Leu His Val Glu Val Lys Gly Tyr Glu Asp Gly
 145 150 155 160
 Gly Ile His Leu Glu Cys Arg Ser Thr Gly Trp Tyr Pro Gln Pro Gln
 165 170 175
 Ile Gln Trp Ser Asn Ala Lys Gly Glu Asn Ile Pro Ala Val Glu Ala
 180 185 190
 Pro Val Val Ala Asp Gly Val Gly Leu Tyr Glu Val Ala Ala Ser Val
 195 200 205
 Ile Met Lys Gly Gly Ser Gly Glu Gly Val Ser Cys Ile Ile Arg Asn
 210 215 220
 Ser Leu Leu Gly Leu Glu Lys Thr Ala Ser Ile Ser Ile Ala Asp Pro
 225 230 235 240
 Phe Phe Arg Ser Ala Gln Pro Trp Ile Ala Ala Leu Ala Gly Thr Leu
 245 250 255
 Pro Ile Leu Leu Leu Leu Leu Ala Gly Ala Ser Tyr Phe Leu Trp Arg
 260 265 270
 Leu Gln Lys Glu Ile Thr Ala Leu Ser Ser Glu Ile Glu Ser Glu Gln
 275 280 285
 Glu Met Lys Glu Met Gly Tyr Ala Ala Thr Glu Arg Glu Ile Ser Leu
 290 295 300
 Arg Glu Ser Leu Gln Glu Glu Leu Lys Arg Lys Lys Ile Gln Tyr Leu
 305 310 315 320
 Thr Arg Gly Glu Glu Ser Ser Ser Asp Thr Asn Lys Ser Ala
 325 330

<210> 135
 <211> 1865
 <212> DNA
 <213> Homo sapiens

<400> 135
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 gtccttgtag ttaaggtctt tgcaaaagtt tgagtgaag ttttaagcta aaaacacgtt 180
 tttaaacttt cacaaatttt gtaagatgac aatagcattc tgtaacatag acattatgggt 240
 aatagtgtatt ttctctccat ccctattttg tccagcgtatt tccaagttat aagacgtgaa 300
 taagactaac cgctcacttc caccagcagc tgacctgggt ggcttttgag ttcaaagagt 360
 catttcttca tcttacctcc agcactgcag ggccgtgtga ccttgcagag ccttgtttct 420
 cattgatgaa aggagctcat gcctcatgaa gccactggta agggccatgg agctcacggg 480
 ccatcaagct tccttcccat cacttggtgg tggaattgac attacccgat gagctcttcc 540
 tggggtcacc tgggaggagg tggcccatgg gtggtatgac aaaatctcat agtcagtctt 600
 tgcagttttc tccacaggta aaatgagatt ttggaaaatt ttcatttggt tgtatttgct 660
 ccaaggtgag tcttacatat tttagcaac aaaacgaaga tcattatgaa aatgtcctta 720
 tggaagcact ctagggccat tgctcatttt tatgagtcct cgtgctaagt ccctgagtac 780
 tgtggctcat gtcttagctg gctaaatcac agtcaaaatt ctcttcttaa gcctcaaaat 840
 aagctgctga ttatactgcc tgttggccag actaatcaaa tacatttgat gttttagctg 900
 actccagata cttttccttc ctctccttg gttctttaac tgtcatccca gatctgcgac 960
 atgcaataag gaaaactgag tcaggaggga agtaggattc cttttgctgc taggaaccac 1020
 gtttagctttg gattgtccat agaatgcacc cttaacagtt cttggaaaat ggatgatatt 1080
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 gaatgtattt tattgaatcc cagagaccct gaaacaccaa gactcattaa tatatgcata 1320
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 cctatttctt ttcagctata gagatggctg gatatcaaaa gcaccacggg agctttgcaa 1500
 tttgctgctc ttttcagccc tcagcttgac tctcagtttt caagaggagg aaaatgaatg 1560
 tttccagca ttctctgtcc tttgctccaa agaagagagc aggtgttggc ttccaaacct 1620

tccgtatttt cttattgctg ttaggggggat caactgcatg tttcctgagg gaaaaggggtg 1680
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aaaaa 1865

<210> 136
<211> 77
<212> PRT
<213> Homo sapiens

<400> 136

Met Asn Val Ser Gln His Ser Leu Ser Phe Ala Pro Lys Lys Arg Ala
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Gly Val Gly Phe Gln Thr Phe Arg Ile Phe Leu Leu Leu Leu Gly Gly
20 25 30

Ser Thr Ala Cys Phe Leu Arg Glu Lys Gly Gly Ser Leu Thr Tyr Leu
35 40 45

Lys Ala Phe Ser Gln Trp Lys Leu Gly Lys Arg Ile Gln Gly Phe Leu
50 55 60

Leu Gln Val Ser Ala Gln Cys Pro Cys His Gln Ala Ala
65 70 75

<210> 137
<211> 2094
<212> DNA
<213> Homo sapiens

<400> 137

tatgtatttg acagcatggt ataatgaaaa gagcagttgg accagaaggt aaattctagt 60
ccagattttg acatttagat gtgtatatat gggaaagtgt cttaaaactt cgagttaatt 120
tttctcatct gtgaaataaa gggattggac tagatactct ttaatagata ttccttatat 180
gcttgtctcc ttctaggtct aaaattctga tccttttagta gtttataaat gattattgggt 240
atcattttca tcatttttagg agctcttttt taaaaaatta ttattatttt ttttgctctg 300
tagcccatgt ctagaacatc ttgggagttc taattatggt ttagataaca taaaaagcat 360
agaatcagac atagttaagc aagaatttca cttagtcccc tagtttttac agtctaaata 420
catttttctt tctttaaaac tggaggttac tgataccacc attttcgtca ccaacagcct 480

| | | | | | |
|------------------------|----------------|-------------|-------------|-------------|------|
| aataattcac aaagctat | ttt gctaattttt | gacacttttt | tctttgccag | taccattaag | 540 |
| ggatttgaat ttttttgagg | ttccatgttt | atttcttttag | ttatgagtat | gaccttggac | 600 |
| aagttacttc tctgtacctg | taaagtgaga | gtaaaataac | atctagttca | tagggttgtt | 660 |
| gactagtacc tggcccatgg | taatcactgt | gtcatgttgg | ctgttactac | cctttaacat | 720 |
| gatttgctcc cctccctgtg | gtaaaaagta | ttcattggca | ctactaatta | atctgttagc | 780 |
| tcaacatata ctaaccaaaa | tggaaatttg | ttttgtgaaa | tacaattgtc | agttcctttt | 840 |
| cattataaga aacgttagtt | tattagtagt | atatacccct | gagaaagcac | taattttattt | 900 |
| tgaaattgag tggattaatt | cataatatga | aagctgagaa | tgtagattgt | cttctttctc | 960 |
| tattttgaat agttcataga | ataattttatt | tcttttatct | gggaacaaaa | ataactggtc | 1020 |
| taatttgtga cattctcaaa | catatttttac | aagtttagat | aagttgagaa | tggcaaaaac | 1080 |
| cacaattact tttgcaacaa | tctaatactt | ttagaagaaa | aatctatctt | accttattttt | 1140 |
| ataactaaaaa aaaaaaaaaa | ggccaaagag | gcctacagga | ttttgagatg | gaggaacaca | 1200 |
| tatttaattc ccctttatgc | cttggttctt | gtcctctctt | ccacgttggg | taacaattttt | 1260 |
| ttggttgttt tgtttaagtt | ggtgctctga | agcttaatct | cagtaccctt | tactctgaat | 1320 |
| tgtcaaattt tgataaaacg | tgccattttc | tttggttaaga | gaaagcaggt | cttaatgtct | 1380 |
| gccagaacac aattttatatg | ccttattggc | ttcattaaac | ttttagaaaa | ctttagcatt | 1440 |
| tgttactttt ttccattgca | tttactttca | aatgcaccta | atgaattcgt | caccagtcg | 1500 |
| caacttttcc cttctctgtc | ccattgcttt | ctcctttccc | cgacgcacag | aataaacatg | 1560 |
| aagctcagca gtagaagcgt | aatgatttcc | ctcaggaaaa | acttctgaca | gctaggtttt | 1620 |
| tcaagggttt ccctgtgcta | gctgagatgc | aaaacaaatc | atggaagatt | gcataacctgt | 1680 |
| gtgggtatttt aaaaacaagt | tgactttttc | agtttcttga | acgggttaagg | gtggatttta | 1740 |
| aaactagaca gtttagtttt | ggggaacaga | agctctcttc | gtcttaagcc | agattctctg | 1800 |
| attctttttag acgtcatagc | tccttagttc | tgctcctgtc | gccctaactt | ggcatgggca | 1860 |
| agttgaagtt catccttaga | ctgcagcgtt | ctgagcatgg | ctgaagtatt | aaaatgttta | 1920 |
| atattttttta gagcaaaatt | gatggaaagc | atgttgctga | atctaaagac | ctgcagtcag | 1980 |
| attcttcaat gtggtttacc | caactggagt | agtgataaac | accttaatca | taaaatgaat | 2040 |
| aaaaacaaaa aaaccaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaa | 2094 |

<210> 138
 <211> 77
 <212> PRT
 <213> Homo sapiens

<400> 138

Met Ser Ala Arg Thr Gln Phe Ile Cys Leu Ile Gly Phe Ile Lys Leu
1 5 10 15

Leu Glu Asn Phe Ser Ile Cys Tyr Phe Phe Pro Leu His Leu Leu Ser
20 25 30

Asn Ala Pro Asn Glu Phe Val Thr Gln Ser Gln Leu Phe Pro Ser Leu
35 40 45

Ser His Cys Phe Leu Leu Ser Pro Thr His Arg Ile Asn Met Lys Leu
50 55 60

Ser Ser Arg Ser Val Met Ile Ser Leu Arg Lys Asn Phe
65 70 75

<210> 139

<211> 2069

<212> DNA

<213> Homo sapiens

<400> 139

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| caacgatgaa | aagagcacaa | cgtacaaaac | caagaaagag | tctgttgtgt | gaagggcat | 120 |
| tcgatgaaga | agcttctgca | cagtcctttc | aggaagtgtt | aagtcaatgg | agaaccggaa | 180 |
| atcatgatga | caacaagaaa | cagaatttac | atgcagcagt | aaaagactca | ttggaagaat | 240 |
| gcgaagtaca | gactaatctg | aaaatttgga | gagaaccact | taatattgaa | cttaaagaag | 300 |
| acattctatc | ctatatggaa | aaattatggc | ttaaaaaaca | caggagaact | ccacaagagc | 360 |
| aactttttta | aatgctacca | gatacggttc | cacatccaca | tgaaaccact | ggatgatcac | 420 |
| agtgttctca | aaatgaaaac | gatgaagata | gtgatgggtg | ggagaccaa | gtacaacaca | 480 |
| cagctctttt | attgccagta | gaaacattaa | acatagagag | acctgaacca | tctctaaaga | 540 |
| tagtcgaact | ggatgatact | tatgaagagg | aatttgaaga | agcagaaaat | attgtgcctt | 600 |
| acaaagttaa | attagctgat | gcagacagtc | aacgaagtgt | tgcttttcat | gattgtcaga | 660 |
| agaatagctt | tccatatgaa | aatggcatcc | atcaacatca | tgttttcgat | aagggaaga | 720 |
| gagacttctt | aaatctttgt | ctgagaaaca | gctatactta | ttataaagat | aattcaaaag | 780 |
| cagaaacttc | aaacacagat | tttgacaaca | tcgtggatcc | tgatgtgtat | tcttctgaca | 840 |
| ttgaaaaaat | tgaggaaagc | acctcctttg | aaagaaattt | aaaggagaaa | aatataggtt | 900 |
| tagaaagtaa | tcaaaagtct | gatgattcct | gtgtatcact | tgaaagcaag | gacactttgc | 960 |

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taggtagaga tttagaaaaa gctcccattg aggagaaatt atctcaagac atcaaagaat 1020
ccttgaatt gagcaatctg tataagaggc caagctttga agaatcaaaa actacaaagt 1080
catcactggt gttacaagaa atagcctgca gaagtaagcc tataacaaaa caatatcaag 1140
gacttgagag attctttatt tttgatacaa atgaaagact caacttactt ctttctcatc 1200
gtttagaatg caacaattcc agtactagga ttacacttgc agaagacaga gaatggattc 1260
cagaccatag cttaagtga tatgctgata atgcaattgt cttgggtgtt ctgcaggggtg 1320
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caacagcaaa ttttccactt tccaactctg ttaaagaaaag ctccagttgc ctttcatcct 1440
ctcatcctcg atcaagaagt gcagctgctc aatcatcatc tagagctgct tctgaaattt 1500
cagaaattga atatattgat attactgacc agaattgagct ttccttagat gacactactg 1560
atcaacatac tttagacaat ttggaaaaag aattacaagt gctgagatct cttgcagata 1620
cttcagaaaa gctttacagc ttaacctcag aagagttccc agatttcagc agccaatcac 1680
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ctgagagcag tacagatgag gaggaggaag attttctcaa caagcaacat gtcacacac 1860
taccgtggtc aaagagtact taaagattat ttgttcatta ctgtttccat tttgtaccca 1920
gagtaaagca aacaactgag aaaagtaacc aagtgattac ctatccaagt gctggagatt 1980
ttgattacta atgtctttga tgtttcaagg ctacaaacta ataaaagtaa aattataagt 2040
tcaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2069

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<210> 140
<211> 605
<212> PRT
<213> Homo sapiens

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<400> 140

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Met Lys Arg Ala Gln Arg Thr Lys Pro Arg Lys Ser Leu Leu Cys Glu
1           5           10          15

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Gly Ser Phe Asp Glu Glu Ala Ser Ala Gln Ser Phe Gln Glu Val Leu
          20          25          30

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Ser Gln Trp Arg Thr Gly Asn His Asp Asp Asn Lys Lys Gln Asn Leu
          35          40          45

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His Ala Ala Val Lys Asp Ser Leu Glu Glu Cys Glu Val Gln Thr Asn
          50          55          60

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Leu Lys Ile Trp Arg Glu Pro Leu Asn Ile Glu Leu Lys Glu Asp Ile
 65 70 75 80

Leu Ser Tyr Met Glu Lys Leu Trp Leu Lys Lys His Arg Arg Thr Pro
 85 90 95

Gln Glu Gln Leu Phe Lys Met Leu Pro Asp Thr Phe Pro His Pro His
 100 105 110

Glu Thr Thr Gly Asp Ala Gln Cys Ser Gln Asn Glu Asn Asp Glu Asp
 115 120 125

Ser Asp Gly Glu Glu Thr Lys Val Gln His Thr Ala Leu Leu Leu Pro
 130 135 140

Val Glu Thr Leu Asn Ile Glu Arg Pro Glu Pro Ser Leu Lys Ile Val
 145 150 155 160

Glu Leu Asp Asp Thr Tyr Glu Glu Glu Phe Glu Glu Ala Glu Asn Ile
 165 170 175

Val Pro Tyr Lys Val Lys Leu Ala Asp Ala Asp Ser Gln Arg Ser Cys
 180 185 190

Ala Phe His Asp Cys Gln Lys Asn Ser Phe Pro Tyr Glu Asn Gly Ile
 195 200 205

His Gln His His Val Phe Asp Lys Gly Lys Arg Asp Phe Leu Asn Leu
 210 215 220

Cys Leu Arg Asn Ser Tyr Thr Tyr Tyr Lys Asp Asn Ser Lys Ala Glu
 225 230 235 240

Thr Ser Asn Thr Asp Phe Asp Asn Ile Val Asp Pro Asp Val Tyr Ser
 245 250 255

Ser Asp Ile Glu Lys Ile Glu Glu Ser Thr Ser Phe Glu Arg Asn Leu
 260 265 270

Lys Glu Lys Asn Ile Gly Leu Glu Ser Asn Gln Lys Ser Asp Asp Ser
 275 280 285

Cys Val Ser Leu Glu Ser Lys Asp Thr Leu Leu Gly Arg Asp Leu Glu
 290 295 300

Lys Ala Pro Ile Glu Glu Lys Leu Ser Gln Asp Ile Lys Glu Ser Leu
 305 310 315 320
 Glu Leu Ser Asn Leu Tyr Lys Arg Pro Ser Phe Glu Glu Ser Lys Thr
 325 330 335
 Thr Lys Ser Ser Leu Leu Leu Gln Glu Ile Ala Cys Arg Ser Lys Pro
 340 345 350
 Ile Thr Lys Gln Tyr Gln Gly Leu Glu Arg Phe Phe Ile Phe Asp Thr
 355 360 365
 Asn Glu Arg Leu Asn Leu Leu Pro Ser His Arg Leu Glu Cys Asn Asn
 370 375 380
 Ser Ser Thr Arg Ile Thr Leu Ala Glu Asp Arg Glu Trp Ile Pro Asp
 385 390 395 400
 His Ser Leu Ser Glu Tyr Ala Asp Asn Ala Ile Val Leu Gly Val Leu
 405 410 415
 Gln Gly Ala Gln Ser Pro Ser Ser Ser Arg Lys Gln Gln Lys Met Gly
 420 425 430
 Gln Lys Ser Gln Arg Pro Ser Thr Ala Asn Phe Pro Leu Ser Asn Ser
 435 440 445
 Val Lys Glu Ser Ser Ser Cys Leu Ser Ser Ser His Pro Arg Ser Arg
 450 455 460
 Ser Ala Ala Ala Gln Ser Ser Ser Arg Ala Ala Ser Glu Ile Ser Glu
 465 470 475 480
 Ile Glu Tyr Ile Asp Ile Thr Asp Gln Asn Glu Leu Ser Leu Asp Asp
 485 490 495
 Thr Thr Asp Gln His Thr Leu Asp Asn Leu Glu Lys Glu Leu Gln Val
 500 505 510
 Leu Arg Ser Leu Ala Asp Thr Ser Glu Lys Leu Tyr Ser Leu Thr Ser
 515 520 525
 Glu Glu Phe Pro Asp Phe Ser Ser Gln Ser Leu Asn Ile Ser Gln Ile
 530 535 540

Ser Thr Asp Phe Leu Lys Thr Ser His Val Arg Gly Pro Cys Gly Val
 545 550 555 560

Glu Glu Leu Ser Cys Ser Gly Arg Asp Thr Lys Ile Gln Ser Leu Leu
 565 570 575

Ser Leu Ser Glu Ser Ser Thr Asp Glu Glu Glu Glu Asp Phe Leu Asn
 580 585 590

Lys Gln His Val Ile Thr Leu Pro Trp Ser Lys Ser Thr
 595 600 605

<210> 141
 <211> 4337
 <212> DNA
 <213> Homo sapiens

<400> 141
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 ggacaattaa cagtgatgac agataaatac agacgcatgg ggatcaaata ctaggcaaaa 180
 cgcttttttaa aagtgtatca ggctttttaag aaacactgca ggatcctgtc tatcttaatg 240
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 gagtctgaaa ccctgatgct taagctccat tctagatcat agctccaact ccttcaggat 360
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 gagtggatca tgatgaccgt attgtaggga cttgccatag tatggctgct tcccgatcta 480
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 caagatcacc aaagaagaga ccagagcctg tgccaattca gaaaggaaat aataatggga 660
 gaaccactga tttaaaacag cagagtaccc gagaatcatg ggtaagccct aggaaaagag 720
 gactttcttc ttcagaaaag gataacatag aaaggcaggc tatagaaaat tgtgagagaa 780
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 acagtgattc agctgttata aactgtgatg actgtcagcc tgatgggaac actaaacaaa 1140

| | | | | | | |
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| atagcattgg | ttcctatgtg | ttacaggaaa | aatcagtagc | tgaaaatggg | gatacggata | 1200 |
| cccaaacttc | aatgttcctt | gatagtagga | aggaggacag | ttatatagac | cataaggtgc | 1260 |
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| cagcctccgg | agaacctgaa | ccatctcctg | ttctagactg | tgtatcagct | caaagtatgt | 1560 |
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| ctaccagagg | tagtcccact | aaaaacagtt | ctccttacag | agaaaatgga | caatttgagg | 1680 |
| agaataatct | tagtcctaata | gaaacaaatg | caactgttag | tgataatgta | agtcaatctc | 1740 |
| ctacaaatcc | tggtgaaatt | tctcaaaatg | aaaaagggat | atgttgtgac | tctcaaaata | 1800 |
| atggaagtga | aggagtaagt | aaaccaccct | cagaggcaag | actcaatatt | ggacatttgc | 1860 |
| catctgccaa | agagagtgcc | agtcagcaca | ttacagaaga | ggaagatgat | gatcctgatg | 1920 |
| tttattactt | tgaatcagat | catgtggcac | tgaaacacaa | caaagattat | cagagactat | 1980 |
| tacagacgat | tgctgtactc | gaggctcagc | gttctcaagc | agtccaagac | cttgaaagtt | 2040 |
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| agaaggctga | tattggggctt | ccatatccac | agagagttgt | tcaattgcct | gagatcgtat | 2160 |
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| atactagaag | agttaagcta | gtttttgata | aagtaggttt | acctgctaga | ccaaaaagtc | 2280 |
| ctttagatcc | taagaaggat | ggagagtccc | tttcatattc | tatgttgcct | ttgagtgatg | 2340 |
| gtccagaagg | ctcaagcagt | cgtcctcaga | tgataagagg | acgcttgtgt | gatgatacca | 2400 |
| aacctgaaac | atttaaccag | ttgtggactg | ttgaagaaca | gaaaaagctg | gaacagctac | 2460 |
| tcatcaaata | ccctcctgaa | gaagtagaat | ctcgacgctg | gcagaagata | gcagatgaat | 2520 |
| tgggcaacag | gacagcaaaa | caggttgcca | gccgagtaca | gaagtatttc | ataaagctaa | 2580 |
| ctaaagctgg | cattccagta | ccaggcagaa | caccaaactt | atatatatac | tccaaaaagt | 2640 |
| cttcaacaag | cagacgacag | caccctctta | ataagcatct | ctttaagcct | tccactttca | 2700 |
| tgacttcaca | tgaaccgcca | gtgtatatgg | atgaagatga | tgaccgatct | tgttttcata | 2760 |
| gccacatgaa | cactgctgtt | gaagatgcat | cagatgacga | aagtattcct | atcatgtata | 2820 |
| ggaatttacc | tgaatataaa | gaactattac | agtttaaaaa | gttaaagaag | cagaaaacttc | 2880 |
| agcaaatgca | agctgaaagt | ggatttgtgc | aacatgtggg | ctttaagtgt | gataactgtg | 2940 |

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<210> 142
<211> 903
<212> PRT
<213> Homo sapiens

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<400> 142

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Asn Gly Leu Asp Glu Ser Phe Cys Gly Arg Thr Leu Arg Asn Arg Ser
 20 25 30

Ile Ala His Pro Glu Glu Ile Ser Ser Asn Ser Gln Val Arg Ser Arg
 35 40 45

Ser Pro Lys Lys Arg Pro Glu Pro Val Pro Ile Gln Lys Gly Asn Asn
 50 55 60

Asn Gly Arg Thr Thr Asp Leu Lys Gln Gln Ser Thr Arg Glu Ser Trp
 65 70 75 80

Val Ser Pro Arg Lys Arg Gly Leu Ser Ser Ser Glu Lys Asp Asn Ile
 85 90 95

Glu Arg Gln Ala Ile Glu Asn Cys Glu Arg Arg Gln Thr Glu Pro Val
 100 105 110

Ser Pro Val Leu Lys Arg Ile Lys Arg Cys Leu Arg Ser Glu Ala Pro
 115 120 125

Asn Ser Ser Glu Glu Asp Ser Pro Ile Lys Ser Asp Lys Glu Ser Val
 130 135 140

Glu Gln Arg Ser Thr Val Val Asp Asn Asp Ala Asp Phe Gln Gly Thr
 145 150 155 160

Lys Arg Ala Cys Arg Cys Leu Ile Leu Asp Asp Cys Glu Lys Arg Glu
 165 170 175

Ile Lys Lys Val Asn Val Ser Glu Glu Gly Pro Leu Asn Ser Ala Val
 180 185 190

Val Glu Glu Ile Thr Gly Tyr Leu Ala Val Asn Gly Val Asp Asp Ser
 195 200 205

Asp Ser Ala Val Ile Asn Cys Asp Asp Cys Gln Pro Asp Gly Asn Thr
 210 215 220

Lys Gln Asn Ser Ile Gly Ser Tyr Val Leu Gln Glu Lys Ser Val Ala
 225 230 235 240

Glu Asn Gly Asp Thr Asp Thr Gln Thr Ser Met Phe Leu Asp Ser Arg
 245 250 255

Lys Glu Asp Ser Tyr Ile Asp His Lys Val Pro Cys Thr Asp Ser Gln
 260 265 270
 Val Gln Val Lys Leu Glu Asp His Lys Ile Val Thr Ala Cys Leu Pro
 275 280 285
 Val Glu His Val Asn Gln Leu Thr Thr Glu Pro Ala Thr Gly Pro Phe
 290 295 300
 Ser Glu Thr Gln Ser Ser Leu Arg Asp Ser Glu Glu Glu Val Asp Val
 305 310 315 320
 Val Gly Asp Ser Ser Ala Ser Lys Glu Gln Cys Lys Glu Asn Thr Asn
 325 330 335
 Asn Glu Leu Asp Thr Ser Leu Glu Ser Met Pro Ala Ser Gly Glu Pro
 340 345 350
 Glu Pro Ser Pro Val Leu Asp Cys Val Ser Ala Gln Met Met Ser Leu
 355 360 365
 Ser Glu Pro Gln Glu His Arg Tyr Thr Leu Arg Thr Ser Pro Arg Arg
 370 375 380
 Ala Ala Pro Thr Arg Gly Ser Pro Thr Lys Asn Ser Ser Pro Tyr Arg
 385 390 395 400
 Glu Asn Gly Gln Phe Glu Glu Asn Asn Leu Ser Pro Asn Glu Thr Asn
 405 410 415
 Ala Thr Val Ser Asp Asn Val Ser Gln Ser Pro Thr Asn Pro Gly Glu
 420 425 430
 Ile Ser Gln Asn Glu Lys Gly Ile Cys Cys Asp Ser Gln Asn Asn Gly
 435 440 445
 Ser Glu Gly Val Ser Lys Pro Pro Ser Glu Ala Arg Leu Asn Ile Gly
 450 455 460
 His Leu Pro Ser Ala Lys Glu Ser Ala Ser Gln His Ile Thr Glu Glu
 465 470 475 480
 Glu Asp Asp Asp Pro Asp Val Tyr Tyr Phe Glu Ser Asp His Val Ala
 485 490 495

Leu Lys His Asn Lys Asp Tyr Gln Arg Leu Leu Gln Thr Ile Ala Val
 500 505 510

Leu Glu Ala Gln Arg Ser Gln Ala Val Gln Asp Leu Glu Ser Leu Gly
 515 520 525

Arg His Gln Arg Glu Ala Leu Lys Asn Pro Ile Gly Phe Val Glu Lys
 530 535 540

Leu Gln Lys Lys Ala Asp Ile Gly Leu Pro Tyr Pro Gln Arg Val Val
 545 550 555 560

Gln Leu Pro Glu Ile Val Trp Asp Gln Tyr Thr His Ser Leu Gly Asn
 565 570 575

Phe Glu Arg Glu Phe Lys Asn Arg Lys Arg His Thr Arg Arg Val Lys
 580 585 590

Leu Val Phe Asp Lys Val Gly Leu Pro Ala Arg Pro Lys Ser Pro Leu
 595 600 605

Asp Pro Lys Lys Asp Gly Glu Ser Leu Ser Tyr Ser Met Leu Pro Leu
 610 615 620

Ser Asp Gly Pro Glu Gly Ser Ser Ser Arg Pro Gln Met Ile Arg Gly
 625 630 635 640

Arg Leu Cys Asp Asp Thr Lys Pro Glu Thr Phe Asn Gln Leu Trp Thr
 645 650 655

Val Glu Glu Gln Lys Lys Leu Glu Gln Leu Leu Ile Lys Tyr Pro Pro
 660 665 670

Glu Glu Val Glu Ser Arg Arg Trp Gln Lys Ile Ala Asp Glu Leu Gly
 675 680 685

Asn Arg Thr Ala Lys Gln Val Ala Ser Arg Val Gln Lys Tyr Phe Ile
 690 695 700

Lys Leu Thr Lys Ala Gly Ile Pro Val Pro Gly Arg Thr Pro Asn Leu
 705 710 715 720

Tyr Ile Tyr Ser Lys Lys Ser Ser Thr Ser Arg Arg Gln His Pro Leu
 725 730 735

Asn Lys His Leu Phe Lys Pro Ser Thr Phe Met Thr Ser His Glu Pro
740 745 750

Pro Val Tyr Met Asp Glu Asp Asp Asp Arg Ser Cys Phe His Ser His
755 760 765

Met Asn Thr Ala Val Glu Asp Ala Ser Asp Asp Glu Ser Ile Pro Ile
770 775 780

Met Tyr Arg Asn Leu Pro Glu Tyr Lys Glu Leu Leu Gln Phe Lys Lys
785 790 795 800

Leu Lys Lys Gln Lys Leu Gln Gln Met Gln Ala Glu Ser Gly Phe Val
805 810 815

Gln His Val Gly Phe Lys Cys Asp Asn Cys Gly Ile Glu Pro Ile Gln
820 825 830

Gly Val Arg Trp His Cys Gln Asp Cys Pro Pro Glu Met Ser Leu Asp
835 840 845

Phe Cys Asp Ser Cys Ser Asp Cys Leu His Glu Thr Asp Ile His Lys
850 855 860

Glu Asp His Gln Leu Glu Pro Ile Tyr Arg Ser Glu Thr Phe Leu Asp
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Arg Asp Tyr Cys Val Ser Gln Gly Thr Ser Tyr Asn Tyr Leu Asp Pro
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Asn Tyr Phe Pro Ala Asn Arg
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<210> 143

<211> 1299

<212> DNA

<213> Homo sapiens

<400> 143

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cacaaatcag tgaatggatc ccaacacccc aaccacagga gcacggattc cctgtacctc 180

aacacccaga ccctgcctcc ctcaggcacc agatccagtg tcctagtgaac acgctggatc 240

ctagatcccc aaccccagat ccccatgcct cgagccctgg atctccaagc tcagctgctg 300

gattctggat gtcaacaaac ctcaccactg gatcctgaca accacaatgc ctggatcctg 360
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tttggttttt tgtttttttt ttaacctcga cactgggtct cagatccttc tgctgactgc 480
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aagccttcac ccaccagatt ctggctccta aaacaagtgc gggggcccca gtggcacagc 600
aagtggatcc tggcaactgc agctgctgga ttccagattc tgggtcccca atccctctgc 660
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gaatcccaag ccctgaatcc ccggtttctg atctgaatct tccaggcgcc ggggtcccaaa 780
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tctgaggcca gggacacatg aagggatgtc cccaccccag cactatcagg gcctccccag 1200
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accaatgat gcraaaaaaa aaaaaaaaaa aaaaaaaaaa 1299

<210> 144
<211> 96
<212> PRT
<213> Homo sapiens

<400> 144

Met Lys Leu His Gly Arg Gly Ser Leu Trp Gly Arg Lys Pro Arg Ser
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Trp Leu Gln Pro Ala Arg Met Leu Asp Ser Pro Ser Pro His Leu Cys
20 25 30

Met Ala Thr Pro Ser Gln Pro Cys Gly Glu Thr Val Pro Trp Asn His
35 40 45

Ser Thr Pro Cys Ile Pro Thr Leu His Ser Ile Phe His Pro Pro Pro
50 55 60

Thr Ser Arg Arg Ile Val Pro Arg Ala Val Phe Leu Gln Gly Val Arg
65 70 75 80

Gly Ile Thr His Ser Trp Arg Leu Ala Arg Arg Gln Ser Glu Ala Arg
85 90 95

<210> 145
<211> 791
<212> DNA
<213> Homo sapiens

<400> 145
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caacaatgct ggaagtgggc agcagtcagt gagtgtcaac aatgaacaca atgtggccaa 180
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tttttaccat gtcattctga aatttttctc tactagttat gtttgatttc tttaagtttc 720
aataaaatca tttagccttg aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 780
aaaaaaaaaa a 791

<210> 146
<211> 185
<212> PRT
<213> Homo sapiens

<400> 146

Met Lys Phe Thr Ile Val Phe Ala Gly Leu Leu Gly Val Phe Leu Ala
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Pro Ala Leu Ala Asn Tyr Asn Ile Asn Val Asn Asp Asp Asn Asn Asn
20 25 30

Ala Gly Ser Gly Gln Gln Ser Val Ser Val Asn Asn Glu His Asn Val
35 40 45

Ala Asn Val Asp Asn Asn Asn Gly Trp Asp Ser Trp Asn Ser Ile Trp

| | | |
|---|-----|---------|
| 50 | 55 | 60 |
| Asp Tyr Gly Asn Gly Phe Ala Ala Thr Arg Leu Phe Gln Lys Lys Thr | | |
| 65 | 70 | 75 80 |
| Cys Ile Val His Lys Met Asn Lys Glu Val Met Pro Ser Ile Gln Ser | | |
| | 85 | 90 95 |
| Leu Asp Ala Leu Val Lys Glu Lys Lys Leu Gln Gly Lys Gly Pro Gly | | |
| | 100 | 105 110 |
| Gly Pro Pro Pro Lys Gly Leu Met Tyr Ser Val Asn Pro Asn Lys Val | | |
| | 115 | 120 125 |
| Asp Asp Leu Ser Lys Phe Gly Lys Asn Ile Ala Asn Met Cys Arg Gly | | |
| | 130 | 135 140 |
| Ile Pro Thr Tyr Met Ala Glu Glu Met Gln Glu Ala Ser Leu Phe Phe | | |
| 145 | 150 | 155 160 |
| Tyr Ser Gly Thr Cys Tyr Thr Thr Ser Val Leu Trp Ile Val Asp Ile | | |
| | 165 | 170 175 |
| Ser Phe Cys Gly Asp Thr Val Glu Asn | | |
| | 180 | 185 |

<210> 147
 <211> 2012
 <212> DNA
 <213> Homo sapiens

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| ggagaccgc gcgcctgccc tgcacgccgg gcggcaacct ttgcagtcgc gttggctgct | 180 |
| gcgatcggcc ggcggtcccc tgccgaaggc tcggtgtctt ctgtccacct cttacacttc | 240 |
| ttcatattatc ggtggatcat ttcgagagtc cgtcttgtaa atgtttggca ctttgcctact | 300 |
| ttattgcttc tttctggcga cagttccagc actcgccgag accggcggag aaaggcagct | 360 |
| gagcccggag aagagcgaaa tatggggacc cgggctaaaa gcagacgtcg tccttcccgc | 420 |
| ccgctatttc tatattcagg cagtggatac atcagggaat aaattcacat cttctccagg | 480 |
| cgaaaaggctc ttccaggtga aagtctcagc accagaggag caattcacta gagttggagt | 540 |
| ccagggtttta gaccgaaaag atgggtcctt catagtaaga tacagaatgt atgcaagcta | 600 |

| | |
|--|------|
| caaaaatctg aaggtggaaa ttaaattcca agggcaacat gtggccaaat ccccatatat | 660 |
| tttaaaaggg ccggtttacc atgagaactg tgactgtcct ctgcaagata gtgcagcctg | 720 |
| gctacgggag atgaactgcc ctgaaaccat tgctcagatt cagagagatc tggcacattt | 780 |
| ccctgctgtg gatccagaaa agattgcagt agaaatccca aaaagatttg gacagaggca | 840 |
| gagcctatgt cactacacct taaaggataa caaggtttat atcaagactc atggtgaaca | 900 |
| tgtaggtttt agaattttca tggatgccat actactttct ttgactagaa aggtgaagat | 960 |
| gccagatgtg gagctctttg ttaatttggg agactggcct ttggaaaaaa agaaatccaa | 1020 |
| ttcaaacatc catccgatct tttcctgggtg tggctccaca gattccaagg atatcgtgat | 1080 |
| gcctacgtac gatttgactg attctgttct ggaaaccatg ggccgggtaa gtctggatat | 1140 |
| gatgtccgtg caagctaaca cgggtcctcc ctgggaaagc aaaaattcca ctgccgtctg | 1200 |
| gagagggcga gacagccgca aagagagact cgagctgggt aaactcagta gaaaacaccc | 1260 |
| agaactcata gacgtgctt tcaccaactt tttcttcttt aaacaggatg aaaacctgta | 1320 |
| tggtcccat gtgaaacata tttcattttt tgatttcttc aagcataagt atcaaataaa | 1380 |
| tatcgatggc actgtagcag cttatcgct gccatatttg ctagttgggtg acagtgttgt | 1440 |
| gctgaagcag gattccatct actatgaaca tttttacaat gagctgcagc cctggaaaca | 1500 |
| ctacattcca gttaagagca acctgagcga tctgctagaa aaacttaaat gggcgaaaga | 1560 |
| tcacgatgaa gaggccaaaa agatagcaaa agcaggacaa gaatttgcaa gaaataatct | 1620 |
| catgggcgat gacatattct gttattattt caaactyttc caggaatatg ccaatttaca | 1680 |
| agtgagtgag ccccaaacc gagagggcat gamaagggtg gaaccacaga ctgaggacga | 1740 |
| cctcttccst tgtacttgcc ataggaaaaa gaccaaagat gaactstgat atgcaaaata | 1800 |
| acttctatta gaataatggt gctctgaaga ctcttcttaa ctaaaaagaa gaattttttt | 1860 |
| aagtattaat tccatggaca atataaaatc tgtgtgattg tttgcagtat gaagacacat | 1920 |
| ttctacttat gcagtattct catgactgta ctttaaagta catttttaga attttataat | 1980 |
| aaaaccacct ttatttttaa aaaaaaaaaa aa | 2012 |

<210> 148
 <211> 502
 <212> PRT
 <213> Homo sapiens

<220>
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 <222> (478)..(478)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (490)..(490)
 <223> Xaa can be any naturally occurring amino acid

 <400> 148

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 20 25 30

 Glu Ile Trp Gly Pro Gly Leu Lys Ala Asp Val Val Leu Pro Ala Arg
 35 40 45

 Tyr Phe Tyr Ile Gln Ala Val Asp Thr Ser Gly Asn Lys Phe Thr Ser
 50 55 60

 Ser Pro Gly Glu Lys Val Phe Gln Val Lys Val Ser Ala Pro Glu Glu
 65 70 75 80

 Gln Phe Thr Arg Val Gly Val Gln Val Leu Asp Arg Lys Asp Gly Ser
 85 90 95

 Phe Ile Val Arg Tyr Arg Met Tyr Ala Ser Tyr Lys Asn Leu Lys Val
 100 105 110

 Glu Ile Lys Phe Gln Gly Gln His Val Ala Lys Ser Pro Tyr Ile Leu
 115 120 125

 Lys Gly Pro Val Tyr His Glu Asn Cys Asp Cys Pro Leu Gln Asp Ser
 130 135 140

 Ala Ala Trp Leu Arg Glu Met Asn Cys Pro Glu Thr Ile Ala Gln Ile
 145 150 155 160

 Gln Arg Asp Leu Ala His Phe Pro Ala Val Asp Pro Glu Lys Ile Ala
 165 170 175

 Val Glu Ile Pro Lys Arg Phe Gly Gln Arg Gln Ser Leu Cys His Tyr
 180 185 190

 Thr Leu Lys Asp Asn Lys Val Tyr Ile Lys Thr His Gly Glu His Val
 195 200 205

 Gly Phe Arg Ile Phe Met Asp Ala Ile Leu Leu Ser Leu Thr Arg Lys

| 210 | 215 | 220 |
|--|------------------------|--|
| Val Lys Met Pro Asp 225 | Val Glu Leu Phe 230 | Val Asn Leu Gly Asp Trp Pro 235 240 |
| Leu Glu Lys Lys Lys Ser Asn Ser Asn Ile His Pro Ile Phe Ser Trp 245 250 255 | | |
| Cys Gly Ser Thr Asp Ser Lys Asp Ile Val Met Pro Thr Tyr Asp Leu 260 265 270 | | |
| Thr Asp Ser Val Leu Glu Thr Met Gly Arg Val Ser Leu Asp Met Met 275 280 285 | | |
| Ser Val Gln Ala Asn Thr Gly Pro Pro Trp Glu Ser Lys Asn Ser Thr 290 295 300 | | |
| Ala Val Trp Arg Gly Arg Asp Ser Arg Lys Glu Arg Leu Glu Leu Val 305 310 315 320 | | |
| Lys Leu Ser Arg Lys His Pro Glu Leu Ile Asp Ala Ala Phe Thr Asn 325 330 335 | | |
| Phe Phe Phe Phe Lys Gln Asp Glu Asn Leu Tyr Gly Pro Ile Val Lys 340 345 350 | | |
| His Ile Ser Phe Phe Asp Phe Phe Lys His Lys Tyr Gln Ile Asn Ile 355 360 365 | | |
| Asp Gly Thr Val Ala Ala Tyr Arg Leu Pro Tyr Leu Leu Val Gly Asp 370 375 380 | | |
| Ser Val Val Leu Lys Gln Asp Ser Ile Tyr Tyr Glu His Phe Tyr Asn 385 390 395 400 | | |
| Glu Leu Gln Pro Trp Lys His Tyr Ile Pro Val Lys Ser Asn Leu Ser 405 410 415 | | |
| Asp Leu Leu Glu Lys Leu Lys Trp Ala Lys Asp His Asp Glu Glu Ala 420 425 430 | | |
| Lys Lys Ile Ala Lys Ala Gly Gln Glu Phe Ala Arg Asn Asn Leu Met 435 440 445 | | |
| Gly Asp Asp Ile Phe Cys Tyr Tyr Phe Lys Leu Phe Gln Glu Tyr Ala | | |

| | | | |
|---|--------------------|-----|-----|
| 450 | 455 | 460 | |
| Asn Leu Gln Val Ser Glu Pro Gln Ile Arg Glu Gly Met Xaa Arg Val | | | |
| 465 | 470 | 475 | 480 |
| Glu Pro Gln Thr Glu Asp Asp Leu Phe Xaa Cys Thr Cys His Arg Lys | | | |
| | 485 | 490 | 495 |
| Lys Thr Lys Asp Glu Leu | | | |
| | 500 | | |
| | | | |
| <210> | 149 | | |
| <211> | 29 | | |
| <212> | DNA | | |
| <213> | Homo sapiens | | |
| | | | |
| <220> | | | |
| <221> | misc_feature | | |
| <222> | (2)..(2) | | |
| <223> | n is a, c, g, or t | | |
| | | | |
| <400> | 149 | | |
| gnaagaagag agcaacagcc aggaccaag | | | 29 |
| | | | |
| <210> | 150 | | |
| <211> | 29 | | |
| <212> | DNA | | |
| <213> | Homo sapiens | | |
| | | | |
| <220> | | | |
| <221> | misc_feature | | |
| <222> | (2)..(2) | | |
| <223> | n is a, c, g, or t | | |
| | | | |
| <400> | 150 | | |
| cncaggctag gcactgattc tgctgggttc | | | 29 |
| | | | |
| <210> | 151 | | |
| <211> | 29 | | |
| <212> | DNA | | |
| <213> | Homo sapiens | | |
| | | | |
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| <222> | (2)..(2) | | |
| <223> | n is a, c, g, or t | | |
| | | | |
| <400> | 151 | | |
| gnagacatga aagttgagca gaaggaaag | | | 29 |

<210> 152
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<212> DNA
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29

<210> 153
<211> 29
<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 153
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29

<210> 154
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<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 154
tnggttttgt acgttgctgct cttttcatc

29

<210> 155
<211> 29
<212> DNA
<213> Homo sapiens

<220>
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<222> (2)..(2)
<223> n is a, c, g, or t

<400> 155
tnatgtcta tataactgtc ctccttcct

29

<210> 156
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 156
 cnacactggg tctcagatcc ttctgctga 29

<210> 157
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 157
 gnctccaaga agtccagcaa agacaattg 29

<210> 158
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 158
 antgccaac atttacaaga cggactctc 29

<210> 159
 <211> 1776
 <212> DNA
 <213> Homo sapiens

<400> 159
 agctcacagt agcccggcgg cccagggcaa tccgaccaca tttcactctc accgctgtag 60
 gaatccagat gcaggccaag tacagcagca cgaggacat gctggatgat gatggggaca 120
 ccaccatgag cctgcattct caagcctctg ccacaactcg gcatccagag ccccggcgca 180
 cagagcacag ggctccctct tcaacgtggc gaccagtggc cctgaccctg ctgactttgt 240
 gcttggtgct gctgataggg ctggcagccc tggggctttt gttttttcag tactaccagc 300

| | | | | | | |
|-------------|-------------|-------------|------------|-------------|------------|------|
| tctccaatac | tgggtcaagac | accattttctc | aaatggaaga | aagattagga | aatacgtccc | 360 |
| aagagttgca | atctcttcaa | gtccagaata | taaagcttgc | aggaagtctg | cagcatgtgg | 420 |
| ctgaaaaact | ctgtcgtgag | ctgtataaca | aagctggagc | acacaggtgc | agcccttgta | 480 |
| cagaacaatg | gaaatggcat | ggagacaatt | gctaccagtt | ctataaagac | agcaaaagtt | 540 |
| gggaggactg | taaatatttc | tgccttagtg | aaaactctac | catgctgaag | ataaacaac | 600 |
| aagaagacct | ggaatttgcc | gcgtctcaga | gctactctga | gtttttctac | tcttattgga | 660 |
| cagggctttt | gcgccctgac | agtggcaagg | cctggctgtg | gatggatgga | acccttttca | 720 |
| cttctgaact | gttccatatt | ataatagatg | tcaccagccc | aagaagcaga | gactgtgtgg | 780 |
| ccatccttaa | tgggatgatc | ttctcaaagg | actgcaaaga | attgaagcgt | tgtgtctgtg | 840 |
| agagaagggc | aggaatgggtg | aagccagaga | gcctccatgt | ccccctgaa | acattaggcg | 900 |
| aagggtgactg | attcgccctc | tgcaactaca | aatagcagag | tgagccaggc | ggtgccaaag | 960 |
| caagggctag | ttgagacatt | gggaaatgga | acataatcag | gaaagactat | ctctctgact | 1020 |
| agtacaaaat | gggttctcgt | gtttcctgtt | caggatcacc | agcatttctg | agcttggggt | 1080 |
| tatgcacgta | tttaacagtc | acaagaagtc | ttatttacat | gccaccaacc | aacctcagaa | 1140 |
| acccataatg | tcatctgcct | tcttggctta | gagataactt | ttagctctct | ttcttctcaa | 1200 |
| tgtctaatat | cacctccctg | ttttcatgtc | ttccttacac | ttggtggaat | aagaaacttt | 1260 |
| ttgaagtaga | ggaaatacat | tgaggtaaca | tccttttctc | tgacagtcaa | gtagtccatc | 1320 |
| agaaattggc | agtcacttcc | cagattgtac | cagcaaatac | acaaggaatt | ctttttgttt | 1380 |
| gtttcagttc | atactagtcc | cttcccaatc | catcagtaaa | gaccccatct | gccttgtcca | 1440 |
| tgccgtttcc | caacagggat | gtcacttgat | atgagaatct | caaactctcaa | tgcttataaa | 1500 |
| gcattccttc | ctgtgtccat | taagactctg | ataattgtct | cccctccata | ggaatttctc | 1560 |
| ccaggaaaaga | aatatatccc | catctccgtt | tcatatcaga | actaccgtcc | ccgatattcc | 1620 |
| cttcagagag | attaaagacc | agaaaaaagt | gagcctcttc | atctgcacct | gtaatagttt | 1680 |
| cagttcctat | tttcttccat | tgacccatat | ttataccttt | caggtactga | agatttaata | 1740 |
| ataataaatg | taaatactgt | gaaaaaaaaa | aaaaaa | | | 1776 |

<210> 160
 <211> 280
 <212> PRT
 <213> Homo sapiens

 <400> 160

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Ala | Lys | Tyr | Ser | Ser | Thr | Arg | Asp | Met | Leu | Asp | Asp | Asp | Gly |
| 1 | | | | 5 | | | | 10 | | | | | | | 15 |

Asp Thr Thr Met Ser Leu His Ser Gln Ala Ser Ala Thr Thr Arg His
 20 25 30

Pro Glu Pro Arg Arg Thr Glu His Arg Ala Pro Ser Ser Thr Trp Arg
 35 40 45

Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val Leu Leu Ile Gly
 50 55 60

Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr Tyr Gln Leu Ser Asn
 65 70 75 80

Thr Gly Gln Asp Thr Ile Ser Gln Met Glu Glu Arg Leu Gly Asn Thr
 85 90 95

Ser Gln Glu Leu Gln Ser Leu Gln Val Gln Asn Ile Lys Leu Ala Gly
 100 105 110

Ser Leu Gln His Val Ala Glu Lys Leu Cys Arg Glu Leu Tyr Asn Lys
 115 120 125

Ala Gly Ala His Arg Cys Ser Pro Cys Thr Glu Gln Trp Lys Trp His
 130 135 140

Gly Asp Asn Cys Tyr Gln Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp
 145 150 155 160

Cys Lys Tyr Phe Cys Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn
 165 170 175

Lys Gln Glu Asp Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe
 180 185 190

Phe Tyr Ser Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala
 195 200 205

Trp Leu Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile
 210 215 220

Ile Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
 225 230 235 240

Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys Val
 245 250 255

Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His Val Pro
260 265 270

Pro Glu Thr Leu Gly Glu Gly Asp
275 280

<210> 161
<211> 947
<212> DNA
<213> Homo sapiens

<400> 161
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acacttgaag tctagtagtg cactgtaata attcattttt taaaagatta tttaatgccc 120
atttcaaaat acagtagttt acacagctac agaaacaatt tggggcaagt tttaaaacac 180
tgaaacagta atagttattg gtgtcacata aaactgattt gttttttaca gccaaacctc 240
tgtcagtcag aggcatcat tagttttata catgtaattt gaaaatcact aaacctcggt 300
ttctcagcag caataattta agaggcttca aaaatataat ttcactctta tttagtattt 360
tttctggggg ggatttttac gtaatttttt tatgaaaaga caaatgcag ttgagataac 420
ttctgggatt aaaatagtct ttgtctttac ttttttggtt tcctaaaaca actttattga 480
cttttagtcc atactgttat atttttgtct taaagaaaat ttaaaactaca aataccaaaa 540
gaaaacattt taaatttagg gatgagactt tgggtgtatcg tgggtctagg tttaatgaac 600
acatctgggg ttaagttggc atttcttcac atctccacac ccacaccaac catcacagcc 660
ccccaccaac cttctcccaa ccccaaaagc attgtccagg gatatagatt ttaccaaagg 720
cttcctggga agacgaggga gcaacacttt agattaaatg tgatcagact ttcctattag 780
atatggctct tctgtctctt gttatcccc tgacagctct gccataaagt cccttctcct 840
catccttccc aaacaggctg tataagtgtt ttgaggtaat taaactcttt cctccagttt 900
acaaatatca cttaacaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 947

<210> 162
<211> 72
<212> PRT
<213> Homo sapiens

<400> 162

Met Arg Leu Trp Cys Ile Val Gly Leu Gly Leu Met Asn Thr Ser Gly
1 5 10 15

Val Lys Leu Ala Phe Leu His Ile Ser Thr Pro Thr Pro Thr Ile Thr
20 25 30

Ala Pro His Gln Pro Ser Pro Asn Pro Lys Ser Ile Val Gln Gly Tyr
35 40 45

Arg Phe Tyr Gln Arg Leu Pro Gly Lys Thr Arg Glu Gln His Phe Arg
50 55 60

Leu Asn Val Ile Arg Leu Ser Tyr
65 70

<210> 163
<211> 2120
<212> DNA
<213> Homo sapiens

<400> 163
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aagtatgtgg tggcctttcg tcccctgtaa aacattgtca cacggtgtgg ggcggcagcg 120
ctggatcttt gcaaggctat tttggcattc tgctggatat atgttcgtaa ataccaaagt 180
cggcgggaaa gtgaagttgt ctccaccata acagcaattht tttctctagc aattgcactt 240
atcacatcag cacttctacc agtggatata tttttggttt cttacatgaa aaatcaaaat 300
ggtacattta aggactgggc taatgctaata gtcagcagac agattgagga cactgtatta 360
tacggttact atactttata ttctgttata ttgttctgtg tgttcttctg gatccctttt 420
gtctacttct attatgaaga aaaggatgat gatgatacta gtaaattgtac tcaaattaaa 480
acggcactca agtatacttt gggatttggt gtgatttggt cactgcttct tttagttggt 540
gcctttgttc cattgaatgt tcccaataac aaaaattcta cagagtggga aaaagtgaag 600
tccctatttg aagaacttgg aagtagtcat ggtttagctg cattgtcatt ttctatcagt 660
tctctgacct tgattggaat gttggcagct ataacttaca cagcctatgg catgtctgcg 720
ttacctttta atctgataaa aggcactaga agcgtgctt atgaacgttt ggaaaacact 780
gaagacattg aagaagtaga acaacacatt caaacgatta aatcaaaaag caaagatggt 840
cgacctttgc cagcaaggga taaacgcgcc ttaaaacaat ttgaagaaag gttacgaaca 900
cttaagaaga gagagaggca tttagaattc attgaaaaca gctgggtggac aaaattttgt 960
ggcgctctgc gtcccctgaa gatcgtctgg ggaatatttt tcatcttagt tgcattgctg 1020
tttgtaattt ctcttttctt gtcaaattta gataaagctc ttcattcagc tggaatagat 1080
tctggtttca taatttttgg agctaacctg agtaatccac tgaatatgct tttgccttta 1140
ctacaaacag ttttccctct tgattatatt cttataacaa ttattattat gtactttatt 1200
tttacttcaa tggcaggaat tcgaaatatt ggcatatggt tcttttggat tagattatat 1260


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aaaatcagaa gaggtagaac caggccccaa gcactccttt ttctctgcat gatacttctg 1320
cttattgtcc ttcacactag ctacatgatt tatagtcttg ctccccaata tgttatgtat 1380
ggaagccaaa attacttaat agagactaat ataacttctg ataatcataa aggcaattca 1440
accctttctg tgccaaagag atgtgatgca gatgctcctg aagatcagtg tactgttacc 1500
cggacatacc tattccttca caagttctgg ttcttcagtg ctgcttacta ttttggtaac 1560
tgggcctttc ttgggggtatt tttgattgga ttaattgtat cctgttgtaa agggaagaaa 1620
tcggttattg aaggagtaga tgaagattca gacataagtg atgatgagcc ctctgtctat 1680
tctgcttgac agccttctgt cttaaagggt ttataatgct gactgaatat ctgttatgca 1740
tttttaaagt attaaactaa cattaggatt tgctaactag ctttcatcaa aaatgggagc 1800
atggctataa gacaactata ttttattata tgttttctga agtaacattg tatcatagat 1860
taacatttta aattaccata atcatgctat gtaaatataa gactactggc tttgtgaggg 1920
aatgtttgtg caaaattttt tcctctaatt tataatagtg ttaaattgat taaaaatctt 1980
ccagaattaa tattcccttt tgtcactttt tgaaaacata ataaatcatt tgtatctgtg 2040
ccttaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2100
aaaaaaaaa aaaaaaaaaa                                     2120

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<210> 164
<211> 464
<212> PRT
<213> Homo sapiens

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<400> 164

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Met Lys Asn Gln Asn Gly Thr Phe Lys Asp Trp Ala Asn Ala Asn Val
1           5           10           15

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Ser Arg Gln Ile Glu Asp Thr Val Leu Tyr Gly Tyr Tyr Thr Leu Tyr
20           25           30

```

```

Ser Val Ile Leu Phe Cys Val Phe Phe Trp Ile Pro Phe Val Tyr Phe
35           40           45

```

```

Tyr Tyr Glu Glu Lys Asp Asp Asp Asp Thr Ser Lys Cys Thr Gln Ile
50           55           60

```

```

Lys Thr Ala Leu Lys Tyr Thr Leu Gly Phe Val Val Ile Cys Ala Leu
65           70           75           80

```

```

Leu Leu Leu Val Gly Ala Phe Val Pro Leu Asn Val Pro Asn Asn Lys
85           90           95

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Asn Ser Thr Glu Trp Glu Lys Val Lys Ser Leu Phe Glu Glu Leu Gly
 100 105 110

Ser Ser His Gly Leu Ala Ala Leu Ser Phe Ser Ile Ser Ser Leu Thr
 115 120 125

Leu Ile Gly Met Leu Ala Ala Ile Thr Tyr Thr Ala Tyr Gly Met Ser
 130 135 140

Ala Leu Pro Leu Asn Leu Ile Lys Gly Thr Arg Ser Ala Ala Tyr Glu
 145 150 155 160

Arg Leu Glu Asn Thr Glu Asp Ile Glu Glu Val Glu Gln His Ile Gln
 165 170 175

Thr Ile Lys Ser Lys Ser Lys Asp Gly Arg Pro Leu Pro Ala Arg Asp
 180 185 190

Lys Arg Ala Leu Lys Gln Phe Glu Glu Arg Leu Arg Thr Leu Lys Lys
 195 200 205

Arg Glu Arg His Leu Glu Phe Ile Glu Asn Ser Trp Trp Thr Lys Phe
 210 215 220

Cys Gly Ala Leu Arg Pro Leu Lys Ile Val Trp Gly Ile Phe Phe Ile
 225 230 235 240

Leu Val Ala Leu Leu Phe Val Ile Ser Leu Phe Leu Ser Asn Leu Asp
 245 250 255

Lys Ala Leu His Ser Ala Gly Ile Asp Ser Gly Phe Ile Ile Phe Gly
 260 265 270

Ala Asn Leu Ser Asn Pro Leu Asn Met Leu Leu Pro Leu Leu Gln Thr
 275 280 285

Val Phe Pro Leu Asp Tyr Ile Leu Ile Thr Ile Ile Ile Met Tyr Phe
 290 295 300

Ile Phe Thr Ser Met Ala Gly Ile Arg Asn Ile Gly Ile Trp Phe Phe
 305 310 315 320

Trp Ile Arg Leu Tyr Lys Ile Arg Arg Gly Arg Thr Arg Pro Gln Ala
 325 330 335

Leu Leu Phe Leu Cys Met Ile Leu Leu Leu Ile Val Leu His Thr Ser
 340 345 350

Tyr Met Ile Tyr Ser Leu Ala Pro Gln Tyr Val Met Tyr Gly Ser Gln
 355 360 365

Asn Tyr Leu Ile Glu Thr Asn Ile Thr Ser Asp Asn His Lys Gly Asn
 370 375 380

Ser Thr Leu Ser Val Pro Lys Arg Cys Asp Ala Asp Ala Pro Glu Asp
 385 390 395 400

Gln Cys Thr Val Thr Arg Thr Tyr Leu Phe Leu His Lys Phe Trp Phe
 405 410 415

Phe Ser Ala Ala Tyr Tyr Phe Gly Asn Trp Ala Phe Leu Gly Val Phe
 420 425 430

Leu Ile Gly Leu Ile Val Ser Cys Cys Lys Gly Lys Lys Ser Val Ile
 435 440 445

Glu Gly Val Asp Glu Asp Ser Asp Ile Ser Asp Asp Glu Pro Ser Val
 450 455 460

<210> 165
 <211> 2487
 <212> DNA
 <213> Homo sapiens

<400> 165
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 gatacaacac tagctgtagc aaagcctatg taaatcatat gatgagcttt catagtaacc 120
 gtccaagcaa aagggtttgt atttttaaga agcattcaga aaatctccgg ggcattactc 180
 tagtgtgcct taattgtgat ttcctaagtg atgtttctgg cttagataat atggctacac 240
 acttaagtca acataaaaact catacttgcc aagttgtaat gcagaaagtt tctgtttgta 300
 tcccaacttc tgagcacctt tctgaattaa aaaaagaagc tcccgcgaaag gaacaagaac 360
 ctgtgtctaa ggaaattgca agacctaaca tggctgaaag agaaacagaa acatcaaatt 420
 ctgaaagtaa acaagataaa gctgcttctt caaaagaaaa aaatggatgt aatgcaaatt 480
 catttgaagg ctcatcaaca acaaaaagtg aagaaagcat aacagtttca gataaggaaa 540
 atgaaacctg tcttgagac caggaaactg gctcaaaaaa catcgtcagt tgtgattcaa 600
 atattggtgc agataaagtg gaaaagaaaa aacaaatata acacgtttgt caggaaatgg 660

| | | | | | | |
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| agttgaagat | gtgccaaagt | tcagaaaaca | taatcttatt | tgatcagatt | aaagatcaca | 720 |
| actccagtga | agccagattt | tcttcaaaga | atattaagga | tttgcgatta | gcatcagata | 780 |
| atgtaagcat | tgatcagttt | ttgagaaaaa | gacatgaacc | tgaatctgtt | agttctgatg | 840 |
| ttagcgagca | aggcagtatt | catttggaac | ctctgactcc | atccgaggta | cttgagtatg | 900 |
| aagccacaga | gattcttcag | aaaggtagtg | gtgatccttc | agccaagact | gatgaagtag | 960 |
| tgtctgatca | aacagatgac | attcctggag | gaaataaccc | tagcacaaca | gaggcaacag | 1020 |
| tagacctgga | agatgaaaaa | gaaagaagtt | gaaattagtc | attttaagtt | tcagtgtacc | 1080 |
| aacgataagg | gcatttgga | cagtgcctatc | aggtagagctc | agtggtagctg | ttgtagggttc | 1140 |
| agaaatggaa | atatgtaagg | gaggtcacac | atacacttta | cctgtatggt | caacctatgt | 1200 |
| tatcaaacia | atcaattcac | caataatagc | atgattagta | gggattccca | aaaagttttt | 1260 |
| aaaaacacga | acaggatttt | aatgataatt | aaatttgagc | tggaaagggtc | tcatttaaatg | 1320 |
| gttttcaagg | aaatgggatt | tggttgctga | catgaattga | tgatattagt | aatattttata | 1380 |
| aagcctttca | aacttccatc | aatcctaagc | taaaaatctt | tattacctgt | atatcctttt | 1440 |
| cagttaactg | agaggaaggg | atttggaac | catgtacttt | tggggagtaa | ttgattaaaa | 1500 |
| acaatggctg | attggcattg | ttaatgaagg | ctttatttgt | gaggatgatg | ctggtaaatg | 1560 |
| gagcatgctt | agagtactaa | attgatctaa | tgagaatttg | gatgaacata | aacttaattt | 1620 |
| tggatttaat | ataacattcc | agtcagacgc | atgtaaacag | aatatttgaa | tctttgtacc | 1680 |
| tccatacaag | tgtagcctg | ccaggctgta | agcttacctt | aattaaaactt | tcagtgaag | 1740 |
| tggatttatt | aagatataaa | tttatatttg | tgctttttgt | cagtgtgtaa | gctgtgtaga | 1800 |
| aattccttga | tgtattagtt | gtattaatgt | aaagtagaaa | cccattgttg | aaactcctgt | 1860 |
| agctattatg | cttttaatat | tgttttaatg | atcttcctta | gaaataggcc | cataaaaaatg | 1920 |
| gtctggaagc | caaaccaaag | tatggtataa | tgtagatatt | gtaaagcagt | aaactgaaaa | 1980 |
| catgtcctgg | catgtattca | gccatgttta | agtgactttt | ctgtaattgt | aaaataaaaa | 2040 |
| cttcaaatgg | gacctaaaac | agtgatgtaa | aagaactggg | tttggaatt | tagcctaatt | 2100 |
| tatctataag | atggctgcta | aattgatttt | tcagttcttt | ttatcatcta | gaatataata | 2160 |
| gatatagaaa | tgaataatat | gaagaacagt | agtttgcttt | gaaataactaa | taaactttta | 2220 |
| tttaaaatgc | ttcattttta | cttcttaaaa | tgtgctttgg | attcttaaat | tttgtttcac | 2280 |
| tgaatgttca | atgttttaaa | tggcgattaa | aatactctgc | tgtatatagt | agtttttgag | 2340 |
| taaatatttg | caataaaaaa | ctgccccga | ataaaaaaaaa | aaaaaaaaaaa | aaaaaaaaaaa | 2400 |
| aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | 2460 |

aaaaaaaaaa aaaaaaaaaa aaaaaaa

2487

<210> 166
<211> 317
<212> PRT
<213> Homo sapiens

<400> 166

Met Met Ser Phe His Ser Asn Arg Pro Ser Lys Arg Phe Cys Ile Phe
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Lys Lys His Ser Glu Asn Leu Arg Gly Ile Thr Leu Val Cys Leu Asn
20 25 30

Cys Asp Phe Leu Ser Asp Val Ser Gly Leu Asp Asn Met Ala Thr His
35 40 45

Leu Ser Gln His Lys Thr His Thr Cys Gln Val Val Met Gln Lys Val
50 55 60

Ser Val Cys Ile Pro Thr Ser Glu His Leu Ser Glu Leu Lys Lys Glu
65 70 75 80

Ala Pro Ala Lys Glu Gln Glu Pro Val Ser Lys Glu Ile Ala Arg Pro
85 90 95

Asn Met Ala Glu Arg Glu Thr Glu Thr Ser Asn Ser Glu Ser Lys Gln
100 105 110

Asp Lys Ala Ala Ser Ser Lys Glu Lys Asn Gly Cys Asn Ala Asn Ser
115 120 125

Phe Glu Gly Ser Ser Thr Thr Lys Ser Glu Glu Ser Ile Thr Val Ser
130 135 140

Asp Lys Glu Asn Glu Thr Cys Leu Ala Asp Gln Glu Thr Gly Ser Lys
145 150 155 160

Asn Ile Val Ser Cys Asp Ser Asn Ile Gly Ala Asp Lys Val Glu Lys
165 170 175

Lys Lys Gln Ile Gln His Val Cys Gln Glu Met Glu Leu Lys Met Cys
180 185 190

Gln Ser Ser Glu Asn Ile Ile Leu Ser Asp Gln Ile Lys Asp His Asn
195 200 205

Ser Ser Glu Ala Arg Phe Ser Ser Lys Asn Ile Lys Asp Leu Arg Leu
 210 215 220

Ala Ser Asp Asn Val Ser Ile Asp Gln Phe Leu Arg Lys Arg His Glu
 225 230 235 240

Pro Glu Ser Val Ser Ser Asp Val Ser Glu Gln Gly Ser Ile His Leu
 245 250 255

Glu Pro Leu Thr Pro Ser Glu Val Leu Glu Tyr Glu Ala Thr Glu Ile
 260 265 270

Leu Gln Lys Gly Ser Gly Asp Pro Ser Ala Lys Thr Asp Glu Val Val
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Ser Asp Gln Thr Asp Asp Ile Pro Gly Gly Asn Asn Pro Ser Thr Thr
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Glu Ala Thr Val Asp Leu Glu Asp Glu Lys Glu Arg Ser
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<210> 167
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 <212> DNA
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<400> 167
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 aaattcttta cagtaaatga gataatgtgt gaaaaagtat tttgtaaagt ctgaggattc 240
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 aaagttaccc aacttaatat tttaattttt taatatttat cttcctttac taattcttga 660
 taaataatag cattagactt gataaaaataa aaaagaattt tagagtagaa ttaatataac 720
 aaaaggggta tatcaaccaa attggtgtca gattgtattc attctctcat cacataaaga 780

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| gtgtatgtat gtagatagta tgggtgtata cacacatata taccaaacac catgaatttt | 900 |
| agcagtctgt gatgatcagc aaaaaagcac ataaagtaaa attagttgac catgctaaat | 960 |
| tcaattctgg aatttttttt tatttgggca tttctagaac tttttacatt tgaaagtaca | 1020 |
| tgatgagtat tagtaacgat gacttatgta taatcagaat ctttatgaca atttagtttt | 1080 |
| acaaggtcag aagagatgag tttgctaaac ccagctgtga tacctcagtt ggaaagggaa | 1140 |
| ttcaaaggta tgctttgtag aacagaaaag tatagttttt ttttcatgaa ctttaatcat | 1200 |
| tttctgtttt tcctctatgt gagtcagcta caaaagtgggt ctaattttta caacagtaga | 1260 |
| acttcctcct tttctactgt aatcttccca ctgactttac tgcacaggta tgaaatacta | 1320 |
| gtgtattgga tcttcagtaa cctttttatt tcctagatga ttgaaatata ggtatttact | 1380 |
| ccatttaaac caggtgataa gatgatgtaa atactcaggg agggatttaa cttgttactt | 1440 |
| ttgctcgttt ggggtgtaaa gtgccatgac tgaataatct tcaattcatg attctagagt | 1500 |
| aagtttaatt tggaaaaagg ggcttcacac atgggtgggtg ttgaacattg attcttttat | 1560 |
| acttaaaaag atgaaaatgt tttgtggact gatacatttt atcttactga atatgaattg | 1620 |
| tttatgtatc tctactgtca aatagccttt ttgaaactca ggaaagacaa aggttcaatt | 1680 |
| acaccacttt tgtcaataag caaaccaggt attttttttt tctcctgttg tctggatatg | 1740 |
| gcaatagatt ttttaaattg ctgtgagaac ccatatatga aaagagagga gttgaattgt | 1800 |
| gtgtgccttt tatgtcttga gatattatag tggaaaagac gacatctact tcaaactgta | 1860 |
| tttttttcgt tttttttttt tttttgggga aggggggaga acggggtctt gctctgtcgc | 1920 |
| ccaggctgga gtgcagtggc gcgatctcag ctgactgcaa cctccacctc ccgggttcaa | 1980 |
| gggattctgc ctgagcctcc cgagtagctg agaccacagg tgcgtgccac cacaccggc | 2040 |
| taattttttt gtatttttag tagagacggg gtttagtaga gacggatcac tcctgaccac | 2100 |
| gtgatccgcc cacctcggcc tcccaaagtg ctgggattac aggcgtgagc caccaccccc | 2160 |
| ggcctgtatt ttcagagagg agagcttgggt gtttttgtgg tgccaagtgg taagataatg | 2220 |
| tctctttgag gcttcctatg gactgccttt attttagtaa actcaagaca ccagttaacc | 2280 |
| tcaacagagt tttggcctta ttagaatttg ttgtgcatct tattgaaagc caggtttaca | 2340 |
| tcacctcacc ccattattct ttttagttaa ataaatttac catgccaagt aaccagaatg | 2400 |
| gagcaaattg gttgatcttt aaggcagtag gtttgactag ctagctatca ttattgtcac | 2460 |
| atctaattgct aggcaccaga aaccatttga gccaggagtg tgaatgaata attcccagag | 2520 |
| acactttaga cattttttta tgttttatat gacattttac atttgtgtga ttgccttaga | 2580 |

| | | | | | | |
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| ttaaagactg | gcctttatcg | tgtctcagt | cagccgaggc | agagcctttg | aaggatgcga | 180 |
| tgttgtcatt | cttactaatc | tagtccagcc | gctgaggtga | ctttcaacgg | cagaccgtct | 240 |
| cctgagcgcc | ccaggtagaa | tttcaaaagt | ctccgggacc | attatggcag | tcaagtggac | 300 |
| gggtgggcat | tcttctcctg | tcctctgcct | gaatgcaagt | aaagaagggc | tgctggcttc | 360 |
| tggagcagag | ggcggagatc | tcacggcctg | gggtgaagat | ggaactccat | taggacacac | 420 |
| gcggttccaa | ggggctgatg | atgttaccag | tgtcttattt | tctccctcct | gtcccaccaa | 480 |
| gctctatgcc | tcacatggag | aaaccattag | tgtactggat | gtcaggtccc | tcaaagattc | 540 |
| cttgaccat | tttcatgtga | atgaagaaga | aatcaattgt | ctttcattga | atcaaacgga | 600 |
| aaacctgctg | gcttctgctg | acgactctgg | ggcaatcaaa | atcctagact | tggaaaacaa | 660 |
| gaaagttatc | agatccttga | agagacattc | caatatctgc | tcctcagtgg | cttttcggcc | 720 |
| tcagaggcct | cagagcctgg | tgtcatgtgg | actggatatg | caggtgatgc | tgtggagtct | 780 |
| tcaaaaagcc | cgaccactct | ggattacaaa | tttacaggag | gatgaaacag | aagaaatgga | 840 |
| aggcccacag | tcacctggtc | agctcttaaa | ccctgcccta | gccattcta | tctctgtggc | 900 |
| ttcgtgtggt | aatattttta | gttgtggtgc | agaagatggt | aaggttcgaa | tctttcgggt | 960 |
| gatgggagtt | aagtgtgaac | aggaactggg | atttaagggc | cacacttcag | gggtatccca | 1020 |
| ggtctgcttt | ctcccagaat | cctattttgct | gcttactgga | gggaatgatg | ggaagatcac | 1080 |
| gttgtgggat | gcaaacagt | aagttgagaa | aaaacagaag | agtcccacaa | aacgtaccca | 1140 |
| caggaagaaa | cctaaaagag | gaacttgcac | caagcagggt | ggaaatacta | acgcttcagt | 1200 |
| aacagatgag | gaagaacatg | gcaacatttt | accgaagcta | aatattgaac | atggagaaaa | 1260 |
| agtgaactgg | ctcttgggta | caaaaataaa | gggacaccaa | aatatattag | tagctgatca | 1320 |
| aactagtgtg | atatctgtat | accccttaaa | tgaattttaa | atccaataaa | aacatttgaa | 1380 |
| gaaaaaaaaa | aaaaaaaaa | | | | | 1398 |

<210> 170

<211> 358

<212> PRT

<213> Homo sapiens

<400> 170

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| Met | Ala | Val | Lys | Trp | Thr | Gly | Gly | His | Ser | Ser | Pro | Val | Leu | Cys | Leu |
| 1 | | | 5 | | | | | 10 | | | | | 15 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Ser | Lys | Glu | Gly | Leu | Leu | Ala | Ser | Gly | Ala | Glu | Gly | Gly | Asp |
| | 20 | | | | | | 25 | | | | | 30 | | | |

Leu Thr Ala Trp Gly Glu Asp Gly Thr Pro Leu Gly His Thr Arg Phe
 35 40 45
 Gln Gly Ala Asp Asp Val Thr Ser Val Leu Phe Ser Pro Ser Cys Pro
 50 55 60
 Thr Lys Leu Tyr Ala Ser His Gly Glu Thr Ile Ser Val Leu Asp Val
 65 70 75 80
 Arg Ser Leu Lys Asp Ser Leu Asp His Phe His Val Asn Glu Glu Glu
 85 90 95
 Ile Asn Cys Leu Ser Leu Asn Gln Thr Glu Asn Leu Leu Ala Ser Ala
 100 105 110
 Asp Asp Ser Gly Ala Ile Lys Ile Leu Asp Leu Glu Asn Lys Lys Val
 115 120 125
 Ile Arg Ser Leu Lys Arg His Ser Asn Ile Cys Ser Ser Val Ala Phe
 130 135 140
 Arg Pro Gln Arg Pro Gln Ser Leu Val Ser Cys Gly Leu Asp Met Gln
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 Val Met Leu Trp Ser Leu Gln Lys Ala Arg Pro Leu Trp Ile Thr Asn
 165 170 175
 Leu Gln Glu Asp Glu Thr Glu Glu Met Glu Gly Pro Gln Ser Pro Gly
 180 185 190
 Gln Leu Leu Asn Pro Ala Leu Ala His Ser Ile Ser Val Ala Ser Cys
 195 200 205
 Gly Asn Ile Phe Ser Cys Gly Ala Glu Asp Gly Lys Val Arg Ile Phe
 210 215 220
 Arg Val Met Gly Val Lys Cys Glu Gln Glu Leu Gly Phe Lys Gly His
 225 230 235 240
 Thr Ser Gly Val Ser Gln Val Cys Phe Leu Pro Glu Ser Tyr Leu Leu
 245 250 255
 Leu Thr Gly Gly Asn Asp Gly Lys Ile Thr Leu Trp Asp Ala Asn Ser
 260 265 270

Glu Val Glu Lys Lys Gln Lys Ser Pro Thr Lys Arg Thr His Arg Lys
 275 280 285

Lys Pro Lys Arg Gly Thr Cys Thr Lys Gln Gly Gly Asn Thr Asn Ala
 290 295 300

Ser Val Thr Asp Glu Glu Glu His Gly Asn Ile Leu Pro Lys Leu Asn
 305 310 315 320

Ile Glu His Gly Glu Lys Val Asn Trp Leu Leu Gly Thr Lys Ile Lys
 325 330 335

Gly His Gln Asn Ile Leu Val Ala Asp Gln Thr Ser Cys Ile Ser Val
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Tyr Pro Leu Asn Glu Phe
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<210> 171

<211> 2132

<212> DNA

<213> Homo sapiens

<400> 171

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cggcggaggc gacctcggcc cggccctgca ctggccgccc ggcaggcgcg acatgagcct      180
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ggttgtgacc acaccgacac gtattttaca gataaatcat tcttgcggcg gcgggtcgaa      300
cacgtttatt tattttttat tttctcaaca agcttttacc cagcacctgt ccagtgaaac      360
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gaaaatctgc caagactagg agggtaaccc agaggaaacc gtcttcaggg cctgtttgct      720
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<210> 172
<211> 381
<212> PRT
<213> Homo sapiens

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<400> 172

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Met Lys Thr Val Lys Glu Lys Lys Glu Cys Gln Arg Leu Arg Lys Ser
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Ala Lys Thr Arg Arg Val Thr Gln Arg Lys Pro Ser Ser Gly Pro Val
          20           25           30

```

```

Cys Trp Leu Cys Leu Arg Glu Pro Gly Asp Pro Glu Lys Leu Gly Glu
          35           40           45

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Phe Leu Gln Lys Asp Asn Ile Ser Val His Tyr Phe Cys Leu Ile Leu .
50 55 60

Ser Ser Lys Leu Pro Gln Arg Gly Gln Ser Asn Arg Gly Phe His Gly
65 70 75 80

Phe Leu Pro Glu Asp Ile Lys Lys Glu Ala Ala Arg Ala Ser Arg Lys
85 90 95

Ile Cys Phe Val Cys Lys Lys Lys Gly Ala Ala Ile Asn Cys Gln Lys
100 105 110

Asp Gln Cys Leu Arg Asn Phe His Leu Pro Cys Gly Gln Glu Arg Gly
115 120 125

Cys Leu Ser Gln Phe Phe Gly Glu Tyr Lys Ser Phe Cys Asp Lys His
130 135 140

Arg Pro Thr Gln Asn Ile Gln His Gly His Val Gly Glu Glu Ser Cys
145 150 155 160

Ile Leu Cys Cys Glu Asp Leu Ser Gln Gln Ser Val Glu Asn Ile Gln
165 170 175

Ser Pro Cys Cys Ser Gln Ala Ile Tyr His Arg Lys Cys Ile Gln Lys
180 185 190

Tyr Ala His Thr Ser Ala Lys His Phe Phe Lys Cys Pro Gln Cys Asn
195 200 205

Asn Arg Lys Glu Phe Pro Gln Glu Met Leu Arg Met Gly Ile His Ile
210 215 220

Pro Asp Arg Asp Ala Ala Trp Glu Leu Glu Pro Gly Ala Phe Ser Asp
225 230 235 240

Leu Tyr Gln Arg Tyr Gln His Cys Asp Ala Pro Ile Cys Pro Tyr Glu
245 250 255

Gln Gly Arg Asp Ser Phe Glu Asp Glu Gly Arg Trp Cys Leu Ile Leu
260 265 270

Cys Ala Thr Cys Gly Ser His Gly Thr His Arg Asp Cys Ser Ser Leu
275 280 285

Arg Phe Asn Ser Lys Lys Trp Glu Cys Glu Glu Cys Ser Pro Ala Ala
 290 295 300

Ala Thr Asp Tyr Ile Pro Glu Asn Ser Gly Asp Ile Pro Cys Cys Ser
 305 310 315 320

Ser Thr Phe His Pro Glu Glu His Phe Cys Arg Asp Asn Thr Leu Glu
 325 330 335

Glu Asn Pro Gly Leu Ser Trp Thr Asp Trp Pro Glu Pro Ser Leu Leu
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Glu Lys Pro Glu Ser Ser Arg Gly Arg Arg Ser Tyr Ser Trp Arg Ser
 355 360 365

Lys Gly Val Arg Ile Thr Asn Ser Cys Lys Lys Ser Lys
 370 375 380

<210> 173
 <211> 984
 <212> DNA
 <213> Homo sapiens

<400> 173
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<210> 174
<211> 59
<212> PRT
<213> Homo sapiens

<400> 174

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Leu Leu Leu Gly Val Val Leu Ser Ile Thr Gly Ile Cys Ala Cys Leu
35 40 45

Gly Val Tyr Ala Arg Lys Arg Asn Gly Gln Met
50 55

<210> 175
<211> 28
<212> DNA
<213> Homo sapiens

<400> 175
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<210> 176
<211> 28
<212> DNA
<213> Homo sapiens

<400> 176
ccgatacacc aaagtctcat ccctaaat 28

<210> 177
<211> 28
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<213> Homo sapiens

<400> 177
gagctagtgt gaaggacaat aagcagaa 28

<210> 178
<211> 28
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<213> Homo sapiens

<400> 178
 gtcgctaaca tcagaactaa cagattca 28

<210> 179
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<400> 179
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<210> 180
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<400> 180
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<210> 181
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<400> 181
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<210> 182
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 <212> DNA
 <213> Homo sapiens

<400> 182
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<210> 183
 <211> 1528
 <212> DNA
 <213> Homo sapiens

<400> 183
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<210> 184

<211> 478

<212> PRT

<213> Homo sapiens

<400> 184

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Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp
35 40 45

Arg Arg Leu Ala Gln Glu Pro Leu Gly Leu Glu Val Asp Gln Phe Leu
50 55 60

Glu Asp Val Arg Leu Gln Glu Arg Thr Ser Gly Gly Leu Leu Ser Glu
 65 70 75 80

Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Ser Lys Glu Lys
 85 90 95

Gly Leu Thr Lys Lys Arg Thr Lys Val Gln Lys Lys Ser Leu Leu Leu
 100 105 110

Lys Lys Pro Leu Arg Val Asp Leu Ile Leu Glu Asn Thr Ser Lys Val
 115 120 125

Pro Ala Pro Lys Asp Val Leu Ala His Gln Val Pro Asn Ala Lys Lys
 130 135 140

Leu Arg Arg Lys Glu Gln Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu
 145 150 155 160

Leu Pro Arg Glu Val Arg Arg Ala Gln Ala Arg Leu Leu Asn Pro Ser
 165 170 175

Ala Thr Arg Ala Lys Pro Gly Pro Gln Asp Thr Val Glu Arg Pro Phe
 180 185 190

Tyr Asp Leu Trp Ala Ser Asp Asn Pro Leu Asp Arg Pro Leu Val Gly
 195 200 205

Gln Asp Glu Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Lys Arg
 210 215 220

Pro Ala Arg Leu His Thr Lys Pro Ser Gln Ala Pro Ala Val Glu Val
 225 230 235 240

Ala Pro Ala Gly Ala Ser Tyr Asn Pro Ser Phe Glu Asp His Gln Thr
 245 250 255

Leu Leu Ser Ala Ala His Glu Val Glu Leu Gln Arg Gln Lys Glu Ala
 260 265 270

Glu Lys Leu Glu Arg Gln Leu Ala Leu Pro Ala Met Glu Gln Ala Ala
 275 280 285

Thr Gln Glu Ser Thr Phe Gln Glu Leu Cys Glu Gly Leu Leu Glu Glu
 290 295 300

Ser Asp Gly Glu Gly Glu Pro Gly Gln Gly Glu Gly Pro Glu Ala Gly
 305 310 315 320

Asp Ala Glu Val Cys Pro Thr Pro Ala Arg Leu Ala Thr Thr Glu Lys
 325 330 335

Lys Thr Glu Gln Gln Arg Arg Arg Glu Lys Ala Val His Arg Leu Arg
 340 345 350

Val Gln Gln Ala Ala Leu Arg Ala Ala Arg Leu Arg His Gln Glu Leu
 355 360 365

Phe Arg Leu Arg Gly Ile Lys Ala Gln Val Ala Leu Arg Leu Ala Glu
 370 375 380

Leu Ala Arg Arg Arg Arg Arg Arg Gln Ala Arg Arg Glu Ala Glu Ala
 385 390 395 400

Asp Lys Pro Arg Arg Leu Gly Arg Leu Lys Tyr Gln Ala Pro Asp Ile
 405 410 415

Asp Val Gln Leu Ser Ser Glu Leu Thr Asp Ser Leu Arg Thr Leu Lys
 420 425 430

Pro Glu Gly Asn Ile Leu Arg Asp Arg Phe Lys Ser Phe Gln Arg Arg
 435 440 445

Asn Met Ile Glu Pro Arg Glu Arg Ala Lys Phe Lys Arg Lys Tyr Lys
 450 455 460

Val Lys Leu Val Glu Lys Arg Ala Phe Arg Glu Ile Gln Leu
 465 470 475

<210> 185

<211> 1472

<212> DNA

<213> Homo sapiens

<400> 185

acaagatggc ggcgccgaag gggagcctct gggtaggac ccaactgggg ctcccgccgc 60

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actcggctctt gggtagatcg gcgtcttgcc accgggcctg tcagttgacc tacccttgct 180

acacctaccc taaggaagag gagttgtacg catgtcagag aggttgcagg ctgttttcaa 240

tttgtcagtt tgtggatgat ggaattgact taaatcgaac taaattggaa tgtgaatctg 300

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catgtacaga agcatattcc caatctgatg agcaatatgc ttgccatctt ggttgccaga 360
atcagctgcc attcgctgaa ctgagacaag aacaacttat gtccctgatg ccaaaaatgc 420
acctactctt tcctctaact ctggtgaggt cattctggag tgacatgatg gactccgcac 480
agagcttcat aacctcttca tggacttttt atcttcaagc cgatgacgga aaaatagtta 540
tattccagtc taagccagaa atccagtagc caccacattt ggagcaggag cctacaaatt 600
tgagagaatc atctctaagc aaaatgtcct cagatctgca aatgagaaaat tcacaagcgc 660
acaggaattt tcttgaagat ggagaaaagt atggcttttt aagatgcctc tctcttaact 720
ctgggtggat tttaactaca actcttgtcc tctcggtgat ggtattgctt tggatttggt 780
gtgcaactgt tgctacagct gtggagcagt atgttccctc tgagaagctg agtatctatg 840
gtgacttggg gtttatgaat gaacaaaagc taaacagata tccagcttct tctcttgagg 900
ttgttagatc taaaactgaa gatcatgaag aagcagggcc tctacctaca aaagtgaatc 960
ttgctcattc tgaaatttaa gcatttttct tttaaaagac aagtgtata gacatctaaa 1020
attccactcc tcatagagct tttaaaatgg ttccattgga tataggcctt aagaaatcac 1080
tataaaatgc aaataaagtt actcaaactc gtgaagactg tatttgctat aactttattg 1140
gtattgtttt tgtagtaatt taagaggtgg atgtttggga ttgtattatt attttactaa 1200
tatctgtagc tattttgttt ttgtctttgg ttattgtttt tttccctttt cttagctatg 1260
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gctgaatatt tagtagaaat gatgcttctg ctcaggaatg gcccacaaat ctgtaatttg 1380
aaatttagca ggaaatgacc tttaatgaca ctacattttc aggaactgaa atcattaaaa 1440
ttttatttga ataattaaaa aaaaaaaaaa aa 1472

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<210> 186
<211> 320
<212> PRT
<213> Homo sapiens

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<400> 186

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Met Ala Ala Pro Lys Gly Ser Leu Trp Val Arg Thr Gln Leu Gly Leu
1           5           10           15

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Pro Pro Leu Leu Leu Thr Met Ala Leu Ala Gly Gly Ser Gly Thr
          20           25           30

```

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Ala Ser Ala Glu Ala Phe Asp Ser Val Leu Gly Asp Thr Ala Ser Cys
          35           40           45

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His Arg Ala Cys Gln Leu Thr Tyr Pro Leu His Thr Tyr Pro Lys Glu
 50 55 60

Glu Glu Leu Tyr Ala Cys Gln Arg Gly Cys Arg Leu Phe Ser Ile Cys
 65 70 75 80

Gln Phe Val Asp Asp Gly Ile Asp Leu Asn Arg Thr Lys Leu Glu Cys
 85 90 95

Glu Ser Ala Cys Thr Glu Ala Tyr Ser Gln Ser Asp Glu Gln Tyr Ala
 100 105 110

Cys His Leu Gly Cys Gln Asn Gln Leu Pro Phe Ala Glu Leu Arg Gln
 115 120 125

Glu Gln Leu Met Ser Leu Met Pro Lys Met His Leu Leu Phe Pro Leu
 130 135 140

Thr Leu Val Arg Ser Phe Trp Ser Asp Met Met Asp Ser Ala Gln Ser
 145 150 155 160

Phe Ile Thr Ser Ser Trp Thr Phe Tyr Leu Gln Ala Asp Asp Gly Lys
 165 170 175

Ile Val Ile Phe Gln Ser Lys Pro Glu Ile Gln Tyr Ala Pro His Leu
 180 185 190

Glu Gln Glu Pro Thr Asn Leu Arg Glu Ser Ser Leu Ser Lys Met Ser
 195 200 205

Ser Asp Leu Gln Met Arg Asn Ser Gln Ala His Arg Asn Phe Leu Glu
 210 215 220

Asp Gly Glu Ser Asp Gly Phe Leu Arg Cys Leu Ser Leu Asn Ser Gly
 225 230 235 240

Trp Ile Leu Thr Thr Thr Leu Val Leu Ser Val Met Val Leu Leu Trp
 245 250 255

Ile Cys Cys Ala Thr Val Ala Thr Ala Val Glu Gln Tyr Val Pro Ser
 260 265 270

Glu Lys Leu Ser Ile Tyr Gly Asp Leu Glu Phe Met Asn Glu Gln Lys
 275 280 285

Leu Asn Arg Tyr Pro Ala Ser Ser Leu Val Val Val Arg Ser Lys Thr
 290 295 300

Glu Asp His Glu Glu Ala Gly Pro Leu Pro Thr Lys Val Asn Leu Ala
 305 310 315 320

<210> 187
 <211> 1573
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1524)..(1524)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (1526)..(1526)
 <223> n is a, c, g, or t

<400> 187
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 ataaacagaa gtttaaaatt ataggctctg tttaacattc agctctgtta actcactcat 120
 ctttttgtgt ttttacactt tgtcaagatt tctttacata ttcatcaatg tctgaagaag 180
 ttacttatgc agatcttcaa ttccagaact ccagtgagat ggaaaaaatc ccagaaattg 240
 gcaaatttgg ggaaaaagca cctccagctc cctctcatgt atggcgcca gcagccttgt 300
 ttctgactct tctgtgcctt ctgttgctca ttggattggg agtcttggca agcatgtttc 360
 atgtaacttt gaagatagaa atgaaaaaaaa tgaacaaact acaaaacatc agtgaagagc 420
 tccagagaaa tattttctcta caactgatga gtaacatgaa tatctccaac aagatcagga 480
 acctctccac cacactgcaa acaatagcca ccaaattatg tcgtgagcta tatagcaaag 540
 aacaagagca caaatgtaag ccttgtccaa ggagatggat ttggcataag gacagctgtt 600
 atttcctaag tgatgatgtc caaacatggc aggagagtaa aatggcctgt gctgctcaga 660
 atgccagcct gttgaagata aacaacaaaa atgcattgga atttataaaa tcccagagta 720
 gatcatatga ctattggctg ggattatctc ctgaagaaga ttccactcgt ggtatgagag 780
 tggataatat aatccactcc tctgcctggg ttataagaaa cgcacctgac ttaaataaca 840
 tgtattgtgg atatataaat agactatatg ttcaatatta tcaactgcact tataaacaaa 900
 gaatgatatg tgagaagatg gccaatccag tgcagcttgg ttctacatat tttagggagg 960
 catgaggcat caatcaaata cattgaagga gtgtaggggg tgggggttct aggctatagg 1020
 taaatttaaa tattttctgg ttgacaatta gttgagtttg tctgaagacc tgggatttta 1080

tcatgcagat gaaacatcca ggtagcaagc ttcagagaga atagactgtg aatgttaatg 1140
 ccagagaggt ataatgaagc atgtccmacy tcccactttc catcatggcy tgaaccykgg 1200
 rggaagagga agtccattca gatagtgtg gggggcctts gaattttcat tttcatwwac 1260
 gttcttcccc ttctggccaa gatttgccag aggcaacatc aaaaaccagc aaattktaat 1320
 tttgtcccac agsgttgcta ggggtggcatg gytccccatt tsgggtccat cctawacttc 1380
 catgggactc cctatggctg aaggccttat gagtcaaagg acttatagcc aattgattgt 1440
 tttaggccag gtaagaatgg atatggacat gcatttatta cytyttaaaa ttattatttt 1500
 aagtaaaagc caataaacia aaangnaaag gcaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1560
 aaaaaaaaaa aaa 1573

<210> 188
 <211> 265
 <212> PRT
 <213> Homo sapiens

<400> 188

Met Ser Glu Glu Val Thr Tyr Ala Asp Leu Gln Phe Gln Asn Ser Ser
1 5 10 15

Glu Met Glu Lys Ile Pro Glu Ile Gly Lys Phe Gly Glu Lys Ala Pro
20 25 30

Pro Ala Pro Ser His Val Trp Arg Pro Ala Ala Leu Phe Leu Thr Leu
35 40 45

Leu Cys Leu Leu Leu Leu Ile Gly Leu Gly Val Leu Ala Ser Met Phe
50 55 60

His Val Thr Leu Lys Ile Glu Met Lys Lys Met Asn Lys Leu Gln Asn
65 70 75 80

Ile Ser Glu Glu Leu Gln Arg Asn Ile Ser Leu Gln Leu Met Ser Asn
85 90 95

Met Asn Ile Ser Asn Lys Ile Arg Asn Leu Ser Thr Thr Leu Gln Thr
100 105 110

Ile Ala Thr Lys Leu Cys Arg Glu Leu Tyr Ser Lys Glu Gln Glu His
115 120 125

Lys Cys Lys Pro Cys Pro Arg Arg Trp Ile Trp His Lys Asp Ser Cys
130 135 140

Tyr Phe Leu Ser Asp Asp Val Gln Thr Trp Gln Glu Ser Lys Met Ala
 145 150 155 160

Cys Ala Ala Gln Asn Ala Ser Leu Leu Lys Ile Asn Asn Lys Asn Ala
 165 170 175

Leu Glu Phe Ile Lys Ser Gln Ser Arg Ser Tyr Asp Tyr Trp Leu Gly
 180 185 190

Leu Ser Pro Glu Glu Asp Ser Thr Arg Gly Met Arg Val Asp Asn Ile
 195 200 205

Ile His Ser Ser Ala Trp Val Ile Arg Asn Ala Pro Asp Leu Asn Asn
 210 215 220

Met Tyr Cys Gly Tyr Ile Asn Arg Leu Tyr Val Gln Tyr Tyr His Cys
 225 230 235 240

Thr Tyr Lys Gln Arg Met Ile Cys Glu Lys Met Ala Asn Pro Val Gln
 245 250 255

Leu Gly Ser Thr Tyr Phe Arg Glu Ala
 260 265

<210> 189
 <211> 618
 <212> DNA
 <213> Homo sapiens

<400> 189
 gagttatatg acactcaaag gaaaagcaaa agagcattaa gaagtgtctg tttttgttat 60
 tgccatttca taaatatttt agtaggtggt caatttcatt ggatattcct tttttttaat 120
 tgtctttgta cctatgattg aaaacagtag ttggtctatg acttttgagg agaggagaa 180
 ccgaagatta caggaggcca gcatgaggtt ggaacaagag aatgatgacc ttgcccatga 240
 actagtaaca agcaaaattg ctctacggaa tgacttggat caggcagaag acaaggcaga 300
 tgtgttgaat aaagagctcc ttttgaccaa acagaggctg gtggagactg aagaggagaa 360
 gaggaagcaa gaggaagaga ctgcccagct aaaagaagtc ttcaggaaac agctagagaa 420
 ggcagaatat gaaataaaga agactacagc tatcattgct gagtataaac aggtaatgta 480
 cttctgtggc acatagagct agttatagtt tgctgctata aaagtaattt tttttttttt 540
 ttgcttgagg ccaggagttt gagactagcc tgagcaacat agcaggactc cgtcccaagg 600
 aaaaaaaaaa aaaaaaaaaa 618

<210> 190
 <211> 120
 <212> PRT
 <213> Homo sapiens

<400> 190

Met Ile Glu Asn Ser Ser Trp Ser Met Thr Phe Glu Glu Arg Glu Asn
 1 5 10 15

Arg Arg Leu Gln Glu Ala Ser Met Arg Leu Glu Gln Glu Asn Asp Asp
 20 25 30

Leu Ala His Glu Leu Val Thr Ser Lys Ile Ala Leu Arg Asn Asp Leu
 35 40 45

Asp Gln Ala Glu Asp Lys Ala Asp Val Leu Asn Lys Glu Leu Leu Leu
 50 55 60

Thr Lys Gln Arg Leu Val Glu Thr Glu Glu Glu Lys Arg Lys Gln Glu
 65 70 75 80

Glu Glu Thr Ala Gln Leu Lys Glu Val Phe Arg Lys Gln Leu Glu Lys
 85 90 95

Ala Glu Tyr Glu Ile Lys Lys Thr Thr Ala Ile Ile Ala Glu Tyr Lys
 100 105 110

Gln Val Met Tyr Phe Cys Gly Thr
 115 120

<210> 191
 <211> 510
 <212> DNA
 <213> Homo sapiens

<400> 191

| | |
|--|-----|
| tgcagaatcc agaatggatg tcctctttgt agccatcttt gctgtgccac ttatcctggg | 60 |
| acaagaatat gaggatgaag aaagactggg agaggatgaa tattatcagg tggctctatta | 120 |
| ttatacagtc acccccagtt atgatgactt tagtgcagat ttcaccattg attactccat | 180 |
| atttgagtca gaggacaggc tgaacagggt ggataaggac ataacagaag caatagagac | 240 |
| taccattagt cttgaaacag cacgtgcaga ccatccgaag cctgtaactg tgaaaccagt | 300 |
| aacaacggaa cctagtccag atctgaacga tgccgtgtcc agtttgcgaa gtcctattcc | 360 |
| cctcctcctg tcgtgtgcct ttgttcaggt ggggatgtat ttcatgtaga aggtggaaga | 420 |

aggctgctat gactctttgg atgggagtct ggcaagagga aattggaaga taaaataaat 480
aataagtga ataaaaaaaa aaaaaaaaaa 510

<210> 192
<211> 131
<212> PRT
<213> Homo sapiens

<400> 192

Met Asp Val Leu Phe Val Ala Ile Phe Ala Val Pro Leu Ile Leu Gly
1 5 10 15

Gln Glu Tyr Glu Asp Glu Glu Arg Leu Gly Glu Asp Glu Tyr Tyr Gln
20 25 30

Val Val Tyr Tyr Tyr Thr Val Thr Pro Ser Tyr Asp Asp Phe Ser Ala
35 40 45

Asp Phe Thr Ile Asp Tyr Ser Ile Phe Glu Ser Glu Asp Arg Leu Asn
50 55 60

Arg Leu Asp Lys Asp Ile Thr Glu Ala Ile Glu Thr Thr Ile Ser Leu
65 70 75 80

Glu Thr Ala Arg Ala Asp His Pro Lys Pro Val Thr Val Lys Pro Val
85 90 95

Thr Thr Glu Pro Ser Pro Asp Leu Asn Asp Ala Val Ser Ser Leu Arg
100 105 110

Ser Pro Ile Pro Leu Leu Leu Ser Cys Ala Phe Val Gln Val Gly Met
115 120 125

Tyr Phe Met
130

<210> 193
<211> 883
<212> DNA
<213> Homo sapiens

<400> 193

catctgacca tccatatcca atgttctcat ttaaacatta cccagcatca ttgtttataa 60

tcagaaaactc tggctccttct gtctggtggc acttagagtc ttttgtgcca taatgcagca 120

gtatggagggg aggattttat ggagaaatgg ggatagtctt catgaccaca aataaataaa 180

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ggaaaactaa gctgcattgt gggttttgaa aagggttatta tacttcttaa caattctttt 240
tttcagggaac ttttctagct gtatgactgt tacttgacct tctttgaaaa gcattcccaa 300
aatgctctat tttagataga ttaacattaa ccaacataat tttttttaga tcgagtcagc 360
ataaatttct aagtcagcct ctagtcgtgg ttcattctctt tcacctgcat tttatttgggt 420
gtttgtctga agaaaggaaa gaggaagca aatacgaatt gtactatttg taccaaactct 480
ttgggattca ttggcaaata atttcagtgt ggtgtattat taaatagaaa aaaaaaattt 540
tgtttcctag gttgaaggtc taattgatac gtttgactta tgatgaccat ttatgcactt 600
tcaaataaat ttgctttcaa aataaatgaa gagcagctgt ccttctttcc tcttttaagt 660
gttcagctgt ggcattgctca gaggttcctg ctggattcca gctggagcgg tgtgataccc 720
ttctttttca gctgttcgtg ccttcctttc ttgtatccac caaagtggag acaaatacat 780
gatctcaaag atacacagta cctacttaat tccagctgat gggagaccaa agaatttgca 840
agtggatggg ttggtatcac tgtaaataaa aagagggcct ggg 883

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<210> 194
<211> 79
<212> PRT
<213> Homo sapiens

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<400> 194

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Met Met Thr Ile Tyr Ala Leu Ser Asn Glu Phe Ala Phe Lys Ile Asn
1           5           10           15

```

```

Glu Glu Gln Leu Ser Phe Phe Pro Leu Leu Ser Val Gln Leu Trp His
          20           25           30

```

```

Ala Gln Arg Phe Leu Leu Asp Ser Ser Trp Ser Gly Val Ile Pro Phe
          35           40           45

```

```

Phe Phe Ser Cys Ser Cys Leu Pro Phe Leu Tyr Pro Pro Lys Trp Arg
          50           55           60

```

```

Gln Ile His Asp Leu Lys Asp Thr Gln Tyr Leu Leu Asn Ser Ser
65           70           75

```

```

<210> 195
<211> 110
<212> DNA
<213> Homo sapiens

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<400> 195
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 60

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aaaaaaaaaa aaaaaaaaga aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 110

<210> 196
 <211> 861
 <212> DNA
 <213> Homo sapiens

<400> 196
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 tgcccatgac tgcctgagaa ggactgcac ggccaccccc aactgccccg cactgtccct 180
 acccgggcag ccatgcgagc ggctggaact ctgctggcct tctgctgcct ggtcttgagc 240
 accactgggg gcccttcccc agatacttgt tcccaggacc ttaactcacg tgtgaagcca 300
 ggatttccta aaacaataaa gaccaatgac ccaggagtcc tccaagcagc cagatacagt 360
 gttgaaaagt tcaacaactg cacgaacgac atgttcttgt tcaaggagtc ccgcatcaca 420
 agggccctag ttcagatagt gaaaggcctg aaatatatgc tcgargtgga aattggcaga 480
 actacctgca agaaaaacca gcacctgcgt ctggatgact gtgacttcca aaccaaccac 540
 accttgaagc agactctgag ctgctactct gaagtctggg tcgtgccctg gctccagcac 600
 ttcgaggtgc ctgttctccg ttgtcactga ccccgccctc ttcagcaaga ccacagccat 660
 gacaaacacc aggatgcatg ctcttgttcc cctccacccc gcywsrtgac crrrcttsac 720
 agaccctctc rggcctcwga cgagtgcg gtrgaagtgc maytgggtsa cmgcagggca 780
 gctrgaatgg cagcwtggta gcgcctccta acagrttaaa trgatcacat gtgmttctaa 840
 aattraaaaa aaaaaaaaaa a 861

<210> 197
 <211> 167
 <212> PRT
 <213> Homo sapiens

<400> 197

Met Leu Pro Glu Lys Ala Leu His Gly His Pro Gln Leu Pro Arg Thr
 1 5 10 15

Val Pro Thr Arg Ala Ala Met Arg Ala Ala Gly Thr Leu Leu Ala Phe
 20 25 30

Cys Cys Leu Val Leu Ser Thr Thr Gly Gly Pro Ser Pro Asp Thr Cys
 35 40 45

Ser Gln Asp Leu Asn Ser Arg Val Lys Pro Gly Phe Pro Lys Thr Ile

50 55 60
 Lys Thr Asn Asp Pro Gly Val Leu Gln Ala Ala Arg Tyr Ser Val Glu
 65 70 75 80
 Lys Phe Asn Asn Cys Thr Asn Asp Met Phe Leu Phe Lys Glu Ser Arg
 85 90 95
 Ile Thr Arg Ala Leu Val Gln Ile Val Lys Gly Leu Lys Tyr Met Leu
 100 105 110
 Glu Val Glu Ile Gly Arg Thr Thr Cys Lys Lys Asn Gln His Leu Arg
 115 120 125
 Leu Asp Asp Cys Asp Phe Gln Thr Asn His Thr Leu Lys Gln Thr Leu
 130 135 140
 Ser Cys Tyr Ser Glu Val Trp Val Val Pro Trp Leu Gln His Phe Glu
 145 150 155 160
 Val Pro Val Leu Arg Cys His
 165

<210> 198
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 198
 anccagaatc ggcacgcgtt ttcgagctg

29

<210> 199
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 199
 tntggtgcgt actggatttc tggcttaga

29

<210> 200
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 200
gntaacagag ctgaatgtta aacaggacc

29

<210> 201
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 201
tntcctcaaa agtcatagac caactactg

29

<210> 202
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 202
gntcagcctg tcctctgact caaatatgg

29

<210> 203
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 203
tnacctgcat tttatttggt gtttgtctg

29

<210> 204
 <211> 29
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, c, g, or t

<400> 204
 tnaacactgt atctggctgc ttggaggac

29

<210> 205
 <211> 2556
 <212> DNA
 <213> Homo sapiens

<400> 205
 gcaagatttg gcctggattc ttctgaggat gtgaagtaat ggaaacagta agactgttcc 60
 agactagggg aagactagag acctaatagc tggattccat gtgatctttt gttggacttt 120
 gggattggag gtgagagtag agaaggcata atgcacgttt ttgagacgag ggaaatgtga 180
 atatagcctg tatgcctaca ctcaagtctg aagacatgtw aaccatgtct atactaacca 240
 gccaaatatt tgaacactaa aaggaagaat tttcttaatg tggtaatggt wtcatggttg 300
 tatagaatgt tcctcctctt gggagatgtg tgttgaaaat agggtttgac gtctaaacct 360
 attttgtttt ggcaaaaagg acgtgtgtct gtacaaaaga agtggagcca gtatggcaaa 420
 atgtttacma ggactctggg tgagargtwc ataggtgctt actatactgt tttgtttctg 480
 aatttggaat ttctcaaaat taaaaaaata tctactgagg agcttttcgt tttaactggt 540
 ggggaatggg ttctgggtgg ttttgcccct tttcttttta gattcaagaa atccatgggtg 600
 aaaggtttgg attcctatga agaaaaggag gataaagtga tcaaggagat ggcagctcag 660
 atccgtgagg tggagcagag ccgacaggag gtggttcggg ctgtcttaga ggttggtttc 720
 cctcggagga tccagaccac ctcaggcagt gccagacca gaagagggct cttcagcacc 780
 tagaagctgg aaagggatga acaggtaaga ctattaggga atctcttggt gggaatttga 840
 catcttagaa cattctgcaa ccttttgcct gggaaatgga aacagatcta atctttacca 900
 ccctcatggc tcaaggacct catctggcag cctggctcat gtttttcagc caagtagctt 960
 ccagcttaca gcagccctca aatttggacc tgccaccagc tccagagctt gactggatgg 1020
 agacaggacc atctctgaca ttcatgtggc atcaggtaca aaggataagc aagccagaag 1080
 agggccaatg gtccctcagg tctcaggacc cctttctcct gattttctac ctattcaagc 1140
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<210> 206

<211> 104

<212> PRT

<213> Homo sapiens

<400> 206

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Leu Ala Ala Trp Leu Met Phe Phe Ser Gln Val Ala Ser Ser Leu Gln
20              25              30

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Gln Pro Ser Asn Leu Asp Leu Pro Pro Ala Pro Glu Leu Asp Trp Met
 35 40 45

Glu Thr Gly Pro Ser Leu Thr Phe Ile Gly His Gln Val Gln Arg Ile
 50 55 60

Ser Lys Pro Glu Glu Gly Gln Trp Ser Leu Arg Ser Gln Asp Pro Phe
 65 70 75 80

Leu Leu Ile Phe Tyr Leu Phe Lys Pro Leu Leu Pro Pro Leu Gln Ala
 85 90 95

Phe Pro Ser Ser Phe Thr Val Pro
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 <211> 1276
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|--|------|
| caagtccagt gaaaggcaaa gggaaagtgg gtcgccccac agcttcaaag gcatcaaagg | 780 |
| aaaagactcc ttctcccaaa gaagaagatg aggaaccgga aagcccgcca gaaaagaaaa | 840 |
| catctacaag cccccaccc gagaaatctg gggatgaagg gtctgaagat gaagcccctt | 900 |
| ctggggagga ttaaaagtga tgatggtctg gggagagatt ttattaaaaa aaaaaagaaa | 960 |
| aaaaaagaaa aaagagggag gaaaaaaaaag aacctactta agatagaaca tggttttggc | 1020 |
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| aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa | 1108 |

<210> 210
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 <212> PRT
 <213> Homo sapiens

<400> 210

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Arg | Pro | Val | Arg | Asn | Arg | Lys | Val | Val | Asp | Tyr | Ser | Gln | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Glu | Ser | Asp | Asp | Ala | Asp | Glu | Asp | Tyr | Gly | Arg | Asp | Ser | Gly | Pro |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Lys | Lys | Ile | Arg | Ser | Ser | Pro | Arg | Glu | Ala | Lys | Asn | Lys | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Gly | Lys | Asn | Ser | Gln | Glu | Asp | Ser | Glu | Asp | Ser | Glu | Asp | Lys |
| | 50 | | | | | 55 | | | | | 60 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Lys | Thr | Lys | Lys | Asp | Asp | Ser | His | Ser | Ala | Glu | Asp | Ser | Glu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Glu | Lys | Glu | Asp | His | Lys | Asn | Val | Arg | Gln | Gln | Arg | Gln | Ala | Ala |
| | | | | 85 | | | | | 90 | | | | | 95 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Lys | Ala | Ala | Ser | Lys | Gln | Arg | Glu | Met | Leu | Met | Glu | Asp | Val | Gly |
| | | | 100 | | | | | 105 | | | | | 110 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Glu | Glu | Gln | Glu | Glu | Glu | Asp | Glu | Ala | Pro | Phe | Gln | Glu | Lys |
| | | | 115 | | | | | 120 | | | | 125 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Gly | Ser | Asp | Glu | Asp | Phe | Leu | Met | Glu | Asp | Asp | Asp | Asp | Ser |
| | 130 | | | | | 135 | | | | | 140 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Tyr | Gly | Ser | Ser | Lys | Lys | Lys | Asn | Lys | Lys | Met | Val | Lys | Lys | Ser |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |

Lys Pro Glu Arg Lys Glu Lys Lys Met Pro Lys Pro Arg Leu Lys Ala
165 170 175

Thr Val Thr Pro Ser Pro Val Lys Gly Lys Gly Lys Val Gly Arg Pro
180 185 190

Thr Ala Ser Lys Ala Ser Lys Glu Lys Thr Pro Ser Pro Lys Glu Glu
195 200 205

Asp Glu Glu Pro Glu Ser Pro Pro Glu Lys Lys Thr Ser Thr Ser Pro
210 215 220

Pro Pro Glu Lys Ser Gly Asp Glu Gly Ser Glu Asp Glu Ala Pro Ser
225 230 235 240

<210> 211

<211> 2952

<212> DNA

<213> Homo sapiens

<400> 211

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| agtmccagct gttgcctmag sgtggacasa tcagscgaag ctctgtccct gcctgttggc | 120 |
| agcmtccatg ggccaagctc ttgcctctca ccatcctctc caggcccagt actgtttcca | 180 |
| gccggcctct ccaggcccaa ctctccctct cagctgtgcc tgccggccca gtcctacct | 240 |
| cgcaaaagcc acgttcggcc cagctcctgc ccagctcctg gcagcctttg taaaccccag | 300 |
| gatcctctaa gtcaggcctt tcaggccctg cctttggctc cccggtggca tggagaggcc | 360 |
| cagctcctgc ctgacagcgg cctctccagg ccagctcctt gcctcacgtt ggctccctg | 420 |
| ggccacgttt ccgcctgcct cgcggcagcc ccgacaatcc cggtcctgc ctcccgatgg | 480 |
| catctttagg ctcatctcgt gcctcaccac ggctgcacc aggccacact cctgcctttc | 540 |
| ggtggcctcc gcgggcctga ctctgcgtc ccaatggcct ctttaggccc ggctcgtgcc | 600 |
| tcgccgcggc ctctgaggc ccacctttgc ccttctggca gcctctccag gccaggact | 660 |
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| cagcctccac gagcccggct cctgcctcac gcggggccct ccaggcccag ctctgtcctc | 960 |
| gcggcggcct ctccaggccc ggctcccgcc cagcccagc gcgtctccca gccaaggct | 1020 |

| | | | | | | |
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| ggcccacccg | aggcggcccg | aagtcggcct | cgccaggccc | agctcctgcc | tggcgtaggc | 1140 |
| ccctgggggc | acggcctctg | cccmacagt | gcccctccgg | gccagctcg | tgcctcggct | 1200 |
| tggccgcctc | aggcccagct | cctgcctgtg | ggcggcctct | ctccagaccc | ggctctcgcc | 1260 |
| tcccggcatc | ctctccaggc | ccagagctgt | ttccagttgc | tagaccattt | ttgtgcctgc | 1320 |
| ctcgttgcag | catctccaag | cccagctttt | gcttttctgc | agtttcttga | ggccgaactc | 1380 |
| catttttcga | atggcttatt | taggcccagc | tcttgcgttt | gcattgtccc | ttcaggccca | 1440 |
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| tgccttcctg | tgtccactcc | aggcccagct | actgccttgg | tgctcttttt | aagtcaataa | 1620 |
| ttttttccag | tcgacctctc | caggcccaac | ttgtacctct | gagtgtcctc | taggatctca | 1680 |
| gcttctgcct | aacaatgacc | tctttagact | cagctcattt | tactgctac | atcttcaagc | 1740 |
| cattctcctg | cctcttggca | acctctagt | gcccagcttc | tgcctcacag | cagcctctcc | 1800 |
| atgcatgcct | agctcctgcc | tctttaggga | acttacaggc | ctaaaacttt | cttaatttgg | 1860 |
| gcttctcaag | cccagctcct | gccttctgtt | gggctctaca | ggcctggcat | catcctttca | 1920 |
| acagcctctt | taggcccggc | ctctccagga | ccaaaacatc | cttaagtcaa | cctcaccagg | 1980 |
| cccggctcct | gtctccttgc | ggcctccaga | ggccgagctt | ttgcctgcca | atggcctctc | 2040 |
| tagccccagc | ttttgcctgc | caatggcctc | tctagcccca | gcttctgcct | ttcatcggtc | 2100 |
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| aacagcctct | ttacccccag | ctcctttctc | cgacttgtct | ctccaggcct | agaacttcct | 2280 |
| catgtttacc | tcaccaggcc | cacctcctgc | cttcagtag | cgtctacaag | tttggctcct | 2340 |
| gcctcccatg | gatctctcca | ggccccaaac | tttctcaagt | caacctcacc | aggcccggct | 2400 |
| tctccctttc | atcagccttc | caaaggccag | cttttgcttc | atgtctgcct | tccgagtccc | 2460 |
| agctcctgtt | ttatggcagc | ctcctgaggc | ccagctcctg | cctcctagt | gcctcttttg | 2520 |
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| caggcccagc | tttgcgtcct | ttcaagagtc | ctgcctcaca | gtggcctccc | aagggcaact | 2640 |
| ttctgcctca | tgtcagcctc | ttgtgcctg | gtcctgcttc | ctggtagact | ctgcaggccc | 2700 |
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| atgagcccaa | atcctgccta | acaacaacct | gtttttgccc | agctcctgct | tcctggcagc | 2820 |

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aaaaaaaaaa aa 2952

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<212> PRT
<213> Homo sapiens

<400> 212

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Gln Asn Phe Leu Thr Ser Ser Ser Pro Gly Leu Ala Ser Ala Ser Gly
20 25 30

Gln Pro Phe Lys Ala Gln Leu Leu Pro His Lys Leu Ser Ser Cys Leu
35 40 45

Met Ala Ala Ser Gln Val Pro Pro Ser Ala Phe Leu Cys Pro Leu Gln
50 55 60

Ala Gln Leu Leu Pro Trp Cys Ser Phe
65 70

<210> 213
<211> 1294
<212> DNA
<213> Homo sapiens

<400> 213

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<210> 214
<211> 134
<212> PRT
<213> Homo sapiens

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<400> 214
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Met Ala Gln Thr Asp Lys Pro Thr Cys Ile Pro Pro Glu Leu Pro Lys
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Met Leu Lys Glu Phe Ala Lys Ala Ala Ile Arg Ala Gln Pro Gln Asp
          20           25           30

```

```

Leu Ile Gln Trp Gly Ala Asp Tyr Phe Glu Ala Leu Ser Arg Gly Glu
          35           40           45

```

```

Thr Pro Pro Val Arg Glu Arg Ser Glu Arg Val Ala Leu Cys Asn Trp
          50           55           60

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```

Ala Glu Leu Thr Pro Glu Leu Leu Lys Ile Leu His Ser Gln Val Ala
65           70           75           80

```

```

Gly Arg Leu Ile Ile Arg Ala Glu Glu Leu Ala Gln Met Trp Lys Val
          85           90           95

```

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Val Asn Leu Pro Thr Asp Leu Phe Asn Ser Val Met Asn Val Gly Arg
          100          105          110

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Phe Thr Glu Glu Ile Glu Trp Leu Lys Phe Leu Ala Leu Ala Cys Ser
 115 120 125

Ala Leu Gly Val Val Ser
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<210> 215
 <211> 1354
 <212> DNA
 <213> Homo sapiens

<400> 215
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<210> 216
 <211> 153
 <212> PRT
 <213> Homo sapiens

<400> 216

Met Glu Ser Ser Val Pro Phe Glu Lys Ala Asn Leu Gln Leu Ala Phe
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Val Ile Leu Ala Ile Phe Cys Leu Phe Ala Lys Ser Leu Ile Val Pro
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Ser Val Val Cys Leu Pro Val Ile Ser Ala Pro Pro Glu Ser Leu Leu
 35 40 45

Glu Met Arg His Pro Asn Pro Thr Thr Ala Leu Pro Ser Gln Ile Leu
 50 55 60

Pro Pro His Glu Ala Pro Gln Gly Ser Thr Ser Ser Leu Lys Phe Gln
 65 70 75 80

Glu Ser Asn Ser Thr Thr Lys Tyr Thr Phe Ile Ile Arg Lys Arg Ile
 85 90 95

Val Leu Leu Asn Gly Arg Thr Ser Pro Met Ser Gln Leu Pro Val Phe
 100 105 110

Leu Ala Cys Gln Ala Arg His Trp Arg Pro Phe Cys Ile Glu Leu Tyr
 115 120 125

Leu Pro Glu Leu Leu Leu Gly Leu Arg Val Gly Ile His Leu Ser Leu
 130 135 140

Leu Pro Thr Met Glu Thr Lys Ser Ser
 145 150

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 <211> 1628
 <212> DNA
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<400> 217

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 gctgctgctg ttggcgtcgc cgccgcgcgc ctccgcgccc tccgcccgcg atcccttcgc 180
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| gatcagcgct | tgcgagcgtg | gctgccgcct | cttctccatc | tgccgatttg | tggccagaag | 360 |
| ctccaagccc | aatgccaccc | aaactgagtg | tgaagcagcc | tgcgtggaag | cctatgtgaa | 420 |
| ggaggcagar | cagcaggcct | gtagccacgg | ctgctggagc | cagccccgcg | agcctgagcc | 480 |
| ggarcagaag | agaaaggctc | tggaggctcc | aagtggggcc | ctctccctct | tggacttggt | 540 |
| ttccaccctc | tgcaatgacc | ttgtcaactc | agcccagggg | tttgtctcct | ccacctggac | 600 |
| atactacttg | cagactgaca | atgggaaagt | ggtggtgttt | cagactcagc | ccatagtgga | 660 |
| gagcctcggc | ttccaggggg | gccgtctgca | gcgcgtggag | gtgacctggc | gaggctccca | 720 |
| ccctgaagcc | ctggaggctg | acgtggaccc | tgtaggcccc | ctggacaagg | tgaggaaggg | 780 |
| caagatccga | gtcaagacca | gcagcaaggc | caaggtggag | tctgaagagc | cacaggacaa | 840 |
| tgacttcctc | agttgcatgt | cccggcgctc | gggtctgcct | cgctggatcc | tggcctgctg | 900 |
| cctcttcctc | tccgtgctgg | tgatgctgtg | gctgagctgc | tccaccctgg | tgaccgcgcc | 960 |
| tggccagcac | ctcaagttcc | agcctctgac | cctggagcag | cacaagggct | tcatgatgga | 1020 |
| gcccgattgg | cccctgtacc | cgccgccgtc | ccacgcctgt | gaggacagcc | taccacccta | 1080 |
| caagctgaag | ctggacctga | ccaagctgta | ggcctccact | ggcccatca | ctgccaaactg | 1140 |
| cagggggccc | ctcgggcctc | acttgccctg | agcccaggag | tccaagggca | gggtgggtcc | 1200 |
| agcgttgagc | ccctccaccc | ccaaatcctt | cctctcctcc | cagtcccacc | ccttgcccca | 1260 |
| cggagtcctg | gggacgcagt | gccccagctg | ggaagagggc | gggatcgggc | actggttcct | 1320 |
| ccttgctccc | gctttcttgg | gggcttgcta | ctttttgtct | tctattgtgt | ggctttctga | 1380 |
| gtatttgaac | cccagtcctg | tgtcaccttc | ctttttcctt | ctatgtcccc | tctctgcggg | 1440 |
| gggggcgctg | aggctgaggg | ggagctgcgt | cttgctaggg | cttccccctt | ctccccatcc | 1500 |
| cggctctccag | agaccagct | tctgagagac | aggggtgtgg | catctccatg | cccctataaa | 1560 |
| gcgtgcctgg | ggcttgctctg | gggctgggga | ggaataaacc | atgtatataa | aagaaaaaaa | 1620 |
| aaaaaaaa | | | | | | 1628 |

<210> 218

<211> 342

<212> PRT

<213> Homo sapiens

<400> 218

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Val | Ala | Leu | Met | Pro | Pro | Pro | Leu | Leu | Leu | Leu | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

Leu Ala Ser Pro Pro Ala Ala Ser Ala Pro Ser Ala Arg Asp Pro Phe
 20 25 30

Ala Pro Gln Leu Gly Asp Thr Gln Asn Cys Gln Leu Arg Cys Arg Asp
 35 40 45

Arg Asp Leu Gly Pro Gln Pro Ser Gln Ala Gly Leu Glu Gly Ala Ser
 50 55 60

Glu Ser Pro Tyr Asp Arg Ala Val Leu Ile Ser Ala Cys Glu Arg Gly
 65 70 75 80

Cys Arg Leu Phe Ser Ile Cys Arg Phe Val Ala Arg Ser Ser Lys Pro
 85 90 95

Asn Ala Thr Gln Thr Glu Cys Glu Ala Ala Cys Val Glu Ala Tyr Val
 100 105 110

Lys Glu Ala Glu Gln Gln Ala Cys Ser His Gly Cys Trp Ser Gln Pro
 115 120 125

Ala Glu Pro Glu Pro Glu Gln Lys Arg Lys Val Leu Glu Ala Pro Ser
 130 135 140

Gly Ala Leu Ser Leu Leu Asp Leu Phe Ser Thr Leu Cys Asn Asp Leu
 145 150 155 160

Val Asn Ser Ala Gln Gly Phe Val Ser Ser Thr Trp Thr Tyr Tyr Leu
 165 170 175

Gln Thr Asp Asn Gly Lys Val Val Val Phe Gln Thr Gln Pro Ile Val
 180 185 190

Glu Ser Leu Gly Phe Gln Gly Gly Arg Leu Gln Arg Val Glu Val Thr
 195 200 205

Trp Arg Gly Ser His Pro Glu Ala Leu Glu Val His Val Asp Pro Val
 210 215 220

Gly Pro Leu Asp Lys Val Arg Lys Ala Lys Ile Arg Val Lys Thr Ser
 225 230 235 240

Ser Lys Ala Lys Val Glu Ser Glu Glu Pro Gln Asp Asn Asp Phe Leu
 245 250 255

Ser Cys Met Ser Arg Arg Ser Gly Leu Pro Arg Trp Ile Leu Ala Cys
 260 265 270

Cys Leu Phe Leu Ser Val Leu Val Met Leu Trp Leu Ser Cys Ser Thr
 275 280 285

Leu Val Thr Ala Pro Gly Gln His Leu Lys Phe Gln Pro Leu Thr Leu
 290 295 300

Glu Gln His Lys Gly Phe Met Met Glu Pro Asp Trp Pro Leu Tyr Pro
 305 310 315 320

Pro Pro Ser His Ala Cys Glu Asp Ser Leu Pro Pro Tyr Lys Leu Lys
 325 330 335

Leu Asp Leu Thr Lys Leu
 340

<210> 219
 <211> 671
 <212> DNA
 <213> Homo sapiens

<400> 219
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 aagctgtttt aggttatgtg aaagagatgt ttcctcatct ctaaggctta ccagaagctc 120
 tgatttgaag agaataaatg gattttgcac aaaaccacag gaaagtcccg gagctccatc 180
 ccgcacttac aacagagtgc ctttacacaa acctacggat tggcagaaaa agatcctcat 240
 atggtcaggt cgcttcaaaa aggaagatga aatcccagag actgtctcgt tggagatgct 300
 tgatgctgca aagaacaaga tgcgagtga gatcagctat ctaatgattg ccctgacggg 360
 ggtaggatgc atcttcatgg ttattgaggg caagaaggct gcccaaagac acgagacttt 420
 aacaagcttg aacttagaaa agaaagctcg tctgaaagag gaagcagcta tgaaggccaa 480
 aacagagtag cagaggtatc cgtgttggct ggattttgaa aatccaggaa ttatgttata 540
 acgtgcctgt attaaaaagg atgtggtatg aggatccatt tcataaagta tgatttgccc 600
 aaacctgtac catttccgta tttctgctgt agaagtagaa ataaattttc ttaaataaaa 660
 aaaaaaaaaa a 671

<210> 220
 <211> 154
 <212> PRT
 <213> Homo sapiens

<400> 220

Met Gly Ser Leu Ser Gly Leu Arg Leu Ala Ala Gly Ser Cys Phe Arg
1 5 10 15

Leu Cys Glu Arg Asp Val Ser Ser Ser Leu Arg Leu Thr Arg Ser Ser
20 25 30

Asp Leu Lys Arg Ile Asn Gly Phe Cys Thr Lys Pro Gln Glu Ser Pro
35 40 45

Gly Ala Pro Ser Arg Thr Tyr Asn Arg Val Pro Leu His Lys Pro Thr
50 55 60

Asp Trp Gln Lys Lys Ile Leu Ile Trp Ser Gly Arg Phe Lys Lys Glu
65 70 75 80

Asp Glu Ile Pro Glu Thr Val Ser Leu Glu Met Leu Asp Ala Ala Lys
85 90 95

Asn Lys Met Arg Val Lys Ile Ser Tyr Leu Met Ile Ala Leu Thr Val
100 105 110

Val Gly Cys Ile Phe Met Val Ile Glu Gly Lys Lys Ala Ala Gln Arg
115 120 125

His Glu Thr Leu Thr Ser Leu Asn Leu Glu Lys Lys Ala Arg Leu Lys
130 135 140

Glu Glu Ala Ala Met Lys Ala Lys Thr Glu
145 150

<210> 221

<211> 1056

<212> DNA

<213> Homo sapiens

<400> 221

cacaagagga gttacttggt ccagcctcct gtgtggactg ctttcctatc aaagcacctt 60

agacatgcac gaggaagaaa tatacacctc tcttcagtgg gatagcccag caccagacac 120

ttaccagaaa tgtctgtctt ccaacaaatg ttcaggagca tgctgtcttg tgatggtgat 180

ttcatgtgtt ttctgcatgg gattattaac ggcattccatt ttcttgggcg tcaagttggt 240

gcaggtgtcc accattgcga tgcagcagca agaaaaactc atccaacaag agagggcact 300

gctaaacttt acagaatgga agagaagctg tgcccttcag atgaaatatt gccaaagcctt 360

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catgcaaaac tcattaagtt caggatttta tctactggcag cttgaggaag attaaaggaa      420
gctatgatta ctgggtgggg ttgtctcagg atggacacag cggacgctgg ctttggcaag      480
atggctcctc tccttctcct ggctgttgc cagcagagag atcccagtca gctaaccaag      540
tctgtggata cgtgaaaagc aattcccttc tttcgtctaa ctgcagcacg tggaagtatt      600
ttatctgtga gaagtatgcg ttgagatcct ctgtctgaaa gaaatttgtgt tcaaagtgtt      660
ctattacact gttattttgga gcatgccatt ggaaaaccca cccccacccc ccctcaaaaa      720
aacagaacag taaaccaaaa tgtggggccat gaaattagca acctgggact caataatata      780
cttgggaata ttcttcacac ccgctccagat ttcatattgat gttgttcaca ttgcaagagt      840
aaaacttatt tagagctaca gaagacaaaa ccctgaagag ttaagaacaa acgcaaggaa      900
ataattttta ttgtttaaag cccggaatga ctgtaacttt cacacaagggt acgcatctat      960
gtttttgggg gaggtgatgt agttacagct gactaatatt tttaaaataa ataaataaat     1020
ttggccttta aaactcaaaa aaaaaaaaaa aaaaaa                                1056

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<210> 222
<211> 116
<212> PRT
<213> Homo sapiens

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<400> 222

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Met His Glu Glu Glu Ile Tyr Thr Ser Leu Gln Trp Asp Ser Pro Ala
1          5          10          15

```

```

Pro Asp Thr Tyr Gln Lys Cys Leu Ser Ser Asn Lys Cys Ser Gly Ala
          20          25          30

```

```

Cys Cys Leu Val Met Val Ile Ser Cys Val Phe Cys Met Gly Leu Leu
          35          40          45

```

```

Thr Ala Ser Ile Phe Leu Gly Val Lys Leu Leu Gln Val Ser Thr Ile
          50          55          60

```

```

Ala Met Gln Gln Gln Glu Lys Leu Ile Gln Gln Glu Arg Ala Leu Leu
65          70          75          80

```

```

Asn Phe Thr Glu Trp Lys Arg Ser Cys Ala Leu Gln Met Lys Tyr Cys
          85          90          95

```

```

Gln Ala Phe Met Gln Asn Ser Leu Ser Ser Gly Phe Tyr His Trp Gln
          100          105          110

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Leu Glu Glu Asp
115

<210> 223
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 223
anattagatc tgtttccatt tcccaggca

29

<210> 224
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 224
tngcgtgaga tcaactactc tgcctgtga

29

<210> 225
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 225
anacaggacc gagtcgagaa gccaaagac

29

<210> 226
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 226
angggacaat gcaaacgcaa gagctgggc 29

<210> 227
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 227
angaggcatg tttatcatca gccctgcag 29

<210> 228
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 228
anatttgcct tctcaaaagg gacactgct 29

<210> 229
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 229
gntgggactg ggaggagagg aaggatttg 29

<210> 230
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 230
gnaacgccat aagcatgtcc ttctaattgt

29

<210> 231
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<400> 231
cntgaaatca ccatcacaag acagcatgc

29